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APR 30 2002
PATENT & TRADEMARK OFFICE

10043[illegible].043002 #6

SEQUENCE LISTING

<110> HYBRIGENICS

Pierre, LEGRAIN

<120> Protein-protein interactions between Shigella Flexneri polypeptides and mammalian polypeptides

<130> B4778A

<140> US 10/043,487

<141> 2002-01-11

<150> US 60/261,130

<151> 2001-01-12

<160> 561

<170> PatentIn version 3.1

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<213> Shigella Flexneri

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attatgggac aacaaatacc aagagtattt aagaacaaga tgttatatga ttatgttttt 240

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gaaccaatag taataaataa tgatgatgac gcattgaatg ctgctgctta tttttctgta 360

aaaaaagcga aaataaaaac agtaaacgat actgatttta aagagtataa taaggtttat 420

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tttacttcat gcggctccgc tgataaagtg gctcctaaaa attttaacaa tgcccctgct 600

gaaagtcttt cttgtatcct taactctctg ccttttttta aggaaaaaga atctttgcta 660

gagcagataa aaaaacacct tgaaaacgat gagtcattga gtgatggtct aaaaatatcc 720

ggctatcatg gatatggagt tcactatggt caagagcttt ttccctactc acattatcgt 780

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accgctatat cccacgccat caatgaagaa aaatcagggg ggggatatag tggtgtttct 180

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agtgaatcgc tgttggcagc cgaaataccc aaagaggaaa aactagaagt tcttgcagca 360

cgaaataatg ctggggaatc tgctttgttc atagctcttc aagaaggtca ttccgctgcg 420

attcaagctt atggagattt tattaaaact tttgatttat caccaaaaga aacgattaaa 480

ctattggatg taagagataa tgaggggtta ccaggattat ttctggccgc agggaaaggg 540

aatatcgagg ctatgatggc atatataaat atatgccatc atagtgggat aaaacttaca 600

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actatagcag cacagagtta tagtagaatg ttctctcaag gctctaactt taaatcttta 240

aatatagcaa ttgatgcacc atcagacgct aaagcctcat ttaaggctat tgagcacctt 300

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catcacactg ttgattttgg tgcaaatgcg tatatcattg atcatgactc tccatatgga 660

tatatgacat taaccgatca ctttgataat gctattccac ctgtttttta ccatgagcac 720

caatcatttt tagataaatt ttcagaggtt aataaagaag ttagtcgata cgtacatgga 780

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gtaagttccc ttactatgct caacgacacc cttcataata tcagaacaac aaatcaggca 180

ttaaagaaag agctttcaca aaaaacgttg actaaaacat cgctagaaga aatagcatta 240

cattcatctc agattagcat ggatgtaaat aaatccgctc aactattgga tattctttcc 300

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gccgagcttg atggagatca aatgatatct catagagaac tgtgggctaa aattgcaaac 420

tccatcaatg atattaatga acagtatctg aaagtatatg aacatgccgt tagttcatat 480

actcaaatgt atcaagattt tagcgctgtt ctttccagtc ttgccggctg gatctctccc 540

ggaggtaacg acggaaactc cgtgaaatta caagtcaact cgcttaaaaa ggcattggaa 600

gaactcaagg aaaaatataa agataaaccg ctatatccag caaataatac tgttagtcag 660

gaacaagcaa ataaatggct tacagaatta ggtggaacaa tcggcaaggt atctcaaaaa 720

aacgggggat atgttgtcag tataaacatg accccaatag acaatatgtt aaaaagctta 780

gataatctag gtggaaatgg cgaggttgtg ctagataatg caaaatatca ggcatggaat 840

gccggattct ctgccgaaga tgaaacaatg aaaaataatc ttcaaacttt agttcaaaaa 900

tacagtaatg ccaatagtat ttttgataat ttagtaaagg ttttgagtag tacaataagc 960

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tcccaagtat ctaaagaagc atcccaagcg acaaatcaat taatacaaaa attattgaat 1080

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acaggtaata tgctgtatga taaagaaagt gaaagtttat tcccaataga ttttcgcaat 480

atttatgctg aatattacgc tgcaaccaaa aaagataaag agattatcga ccgacgatta 540

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<213> Shigella Flexneri

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Lys Asn Ser Ser Cys Thr His Pro Lys Ala Ala Leu Val Phe Leu Gly
35 40 45

Glu Lys Gly Phe Cys Asp Ser Asn Asp Val Leu Ser Ile Met Gly Gln
50 55 60

Gln Ile Pro Arg Val Phe Lys Asn Lys Met Leu Tyr Asp Tyr Val Phe
65 70 75 80

Lys Asn Glu Lys Ser Lys Asn Asp Phe Leu Lys Met Ala Glu Ser Trp
85 90 95

Leu Pro Gln Ser Glu Pro Ile Val Ile Asn Asn Asp Asp Asp Ala Leu
100 105 110

Asn Ala Ala Ala Tyr Phe Ser Val Lys Lys Ala Lys Ile Lys Thr Val
115 120 125

Asn Asp Thr Asp Phe Lys Glu Tyr Asn Lys Val Tyr Ile Leu Gly His
130 135 140

Gly Ser Pro Gly Ser His Gln Leu Gly Leu Gly Ser Glu Leu Ile Asp
145 150 155 160

Val Gln Thr Ile Ile Ser Arg Met Lys Asp Cys Gly Ile Leu Asn Val
165 170 175

Lys Asp Ile Arg Phe Thr Ser Cys Gly Ser Ala Asp Lys Val Ala Pro
180 185 190

Lys Asn Phe Asn Asn Ala Pro Ala Glu Ser Leu Ser Cys Ile Leu Asn
195 200 205

Ser Leu Pro Phe Phe Lys Glu Lys Glu Ser Leu Leu Glu Gln Ile Lys
210 215 220

Lys His Leu Glu Asn Asp Glu Ser Leu Ser Asp Gly Leu Lys Ile Ser
225 230 235 240

Gly Tyr His Gly Tyr Gly Val His Tyr Gly Gln Glu Leu Phe Pro Tyr
245 250 255

Ser His Tyr Arg Ser Thr Ser Ile Pro Ala Asp Pro Glu His Thr Val
260 265 270

Lys Arg Ser Ser Gln Lys Lys Thr Phe Ile Ile Asn Lys Glu Leu Asp
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<211> 225

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<213> Shigella Flexneri

<400> 9

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His Leu Ile Ile Gly Ser Asn Thr Ala Asn Glu Asn Lys Gly Met Lys
20 25 30

Asn Asn Ile Ile Asn Val Thr Asn Thr Ala Ile Ser His Ala Ile Asn
35 40 45

Glu Glu Lys Ser Gly Gly Gly Tyr Ser Gly Val Ser Phe Arg Lys Leu
50 55 60

Ala Lys Ile Gln Asn Ile Ser Ile Pro Thr Lys Asn Asn Lys Glu Tyr
65 70 75 80

Asn Arg His Asn Leu Phe Ser Leu Ile Trp His Gly Asn Ala Asp Ala
85 90 95

Ala Arg Lys Tyr Ser Glu Ser Leu Leu Ala Ala Glu Ile Pro Lys Glu
100 105 110

Glu Lys Leu Glu Val Leu Ala Ala Arg Asn Asn Ala Gly Glu Ser Ala
115 120 125

Leu Phe Ile Ala Leu Gln Glu Gly His Ser Ala Ala Ile Gln Ala Tyr
130 135 140

Gly Asp Phe Ile Lys Thr Phe Asp Leu Ser Pro Lys Glu Thr Ile Lys
145 150 155 160

Leu Leu Asp Val Arg Asp Asn Glu Gly Leu Pro Gly Leu Phe Leu Ala
165 170 175

Ala Gly Lys Gly Asn Ile Glu Ala Met Met Ala Tyr Ile Asn Ile Cys
180 185 190

His His Ser Gly Ile Lys Leu Thr Glu Ile Ala Asp Arg Leu Asn Asn
195 200 205

Asn Glu Gln Asp Met Phe Asn Ile Ile Ser Asp Lys Ile Gln Glu Leu
210 215 220

Phe
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<210> 10

<211> 470

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<213> Shigella Flexneri

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Val Arg Asn Ala Ala Gln Gln Thr Met Pro Asp Glu Lys Asn Leu Lys
35 40 45

Asp Ser Ala Asn Ile Ile Lys Asp Phe Phe Arg Lys Thr Ile Ala Ala
50 55 60

Gln Ser Tyr Ser Arg Met Phe Ser Gln Gly Ser Asn Phe Lys Ser Leu
65 70 75 80

Asn Ile Ala Ile Asp Ala Pro Ser Asp Ala Lys Ala Ser Phe Lys Ala
85 90 95

Ile Glu His Leu Asp Arg Leu Ser Lys His Tyr Ile Ser Glu Ile Arg
100 105 110

Glu Lys Leu His Pro Leu Ser Ala Glu Glu Leu Asn Leu Leu Ser Leu
115 120 125

Ile Ile Asn Ser Asp Leu Ile Phe Arg His Gln Ser Asn Ser Asp Leu
130 135 140

Ser Asp Lys Ile Leu Asn Ile Lys Ser Phe Asn Lys Ile Gln Ser Glu
145 150 155 160

Gly Ile Cys Thr Lys Arg Asn Thr Tyr Ala Asp Asp Ile Lys Lys Ile
165 170 175

Ala Asn His Asp Phe Val Phe Phe Gly Val Glu Ile Ser Asn His Gln

180 185 190

Lys Lys His Pro Leu Asn Thr Lys His His Thr Val Asp Phe Gly Ala
195 200 205

Asn Ala Tyr Ile Ile Asp His Asp Ser Pro Tyr Gly Tyr Met Thr Leu
210 215 220

Thr Asp His Phe Asp Asn Ala Ile Pro Pro Val Phe Tyr His Glu His
225 230 235 240

Gln Ser Phe Leu Asp Lys Phe Ser Glu Val Asn Lys Glu Val Ser Arg
245 250 255

Tyr Val His Gly Ser Lys Gly Ile Ile Asp Val Pro Ile Phe Asn Thr
260 265 270

Lys Asp Met Lys Leu Gly Leu Gly Leu Tyr Leu Ile Asp Phe Ile Arg
275 280 285

Lys Ser Glu Asp Gln Ser Phe Lys Glu Phe Cys Tyr Gly Lys Asn Leu
290 295 300

Ala Pro Val Asp Leu Asp Arg Ile Ile Asn Phe Val Phe Gln Pro Glu
305 310 315 320

Tyr His Ile Pro Arg Met Val Ser Thr Glu Asn Phe Lys Lys Val Lys
325 330 335

Ile Arg Glu Ile Ser Leu Glu Glu Ala Val Thr Ala Ser Asn Tyr Glu
340 345 350

Glu Ile Asn Lys Gln Val Thr Asn Lys Lys Ile Ala Leu Gln Ala Leu
355 360 365

Phe Leu Ser Ile Thr Asn Gln Lys Glu Asp Val Ala Leu Tyr Ile Leu
370 375 380

Ser Asn Phe Glu Ile Thr Arg Gln Asp Val Ile Ser Ile Lys His Glu
385 390 395 400

Leu Tyr Asp Ile Glu Tyr Leu Leu Ser Ala His Asn Ser Ser Cys Lys
405 410 415

Val Leu Glu Tyr Phe Ile Asn Lys Gly Leu Val Asp Val Asn Thr Lys
420 425 430

Phe Lys Lys Thr Asn Ser Gly Asp Cys Met Leu Asp Asn Ala Ile Lys
435 440 445

Tyr Glu Asn Ala Glu Met Ile Lys Leu Leu Leu Lys Tyr Gly Ala Thr
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Ser Asp Asn Lys Tyr Ile
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<213> Shigella Flexneri

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35 40 45

Asp Thr Leu His Asn Ile Arg Thr Thr Asn Gln Ala Leu Lys Lys Glu
50 55 60

Leu Ser Gln Lys Thr Leu Thr Lys Thr Ser Leu Glu Glu Ile Ala Leu
65 70 75 80

His Ser Ser Gln Ile Ser Met Asp Val Asn Lys Ser Ala Gln Leu Leu
85 90 95

Asp Ile Leu Ser Arg Asn Glu Tyr Pro Ile Asn Lys Asp Ala Arg Glu
100 105 110

Leu Leu His Ser Ala Pro Lys Glu Ala Glu Leu Asp Gly Asp Gln Met
115 120 125

Ile Ser His Arg Glu Leu Trp Ala Lys Ile Ala Asn Ser Ile Asn Asp
130 135 140

Ile Asn Glu Gln Tyr Leu Lys Val Tyr Glu His Ala Val Ser Ser Tyr
145 150 155 160

Thr Gln Met Tyr Gln Asp Phe Ser Ala Val Leu Ser Ser Leu Ala Gly
165 170 175

Trp Ile Ser Pro Gly Gly Asn Asp Gly Asn Ser Val Lys Leu Gln Val
180 185 190

Asn Ser Leu Lys Lys Ala Leu Glu Glu Leu Lys Glu Lys Tyr Lys Asp
195 200 205

Lys Pro Leu Tyr Pro Ala Asn Asn Thr Val Ser Gln Glu Gln Ala Asn
210 215 220

Lys Trp Leu Thr Glu Leu Gly Gly Thr Ile Gly Lys Val Ser Gln Lys
225 230 235 240

Asn Gly Gly Tyr Val Val Ser Ile Asn Met Thr Pro Ile Asp Asn Met
245 250 255

Leu Lys Ser Leu Asp Asn Leu Gly Gly Asn Gly Glu Val Val Leu Asp
260 265 270

Asn Ala Lys Tyr Gln Ala Trp Asn Ala Gly Phe Ser Ala Glu Asp Glu
275 280 285

Thr Met Lys Asn Asn Leu Gln Thr Leu Val Gln Lys Tyr Ser Asn Ala
290 295 300

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<211> 382

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<213> Shigella Flexneri

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Thr Asp Ile Ser Thr Lys Gln Thr Gln Ser Ser Ser Glu Thr Gln Lys
35 40 45

Ser Gln Asn Tyr Gln Gln Ile Ala Ala His Ile Pro Leu Asn Val Gly
50 55 60

Lys Asn Pro Val Leu Thr Thr Thr Leu Asn Asp Asp Gln Leu Leu Lys
65 70 75 80

Leu Ser Glu Gln Val Gln His Asp Ser Glu Ile Ile Ala Arg Leu Thr
85 90 95

Asp Lys Lys Met Lys Asp Leu Ser Glu Met Ser His Thr Leu Thr Pro
100 105 110

Glu Asn Thr Leu Asp Ile Ser Ser Leu Ser Ser Asn Ala Val Ser Leu
115 120 125

Ile Ile Ser Val Ala Val Leu Leu Ser Ala Leu Arg Thr Ala Glu Thr
130 135 140

Lys Leu Gly Ser Gln Leu Ser Leu Ile Ala Phe Asp Ala Thr Lys Ser
145 150 155 160

Ala Ala Glu Asn Ile Val Arg Gln Gly Leu Ala Ala Leu Ser Ser Ser
165 170 175

Ile Thr Gly Ala Val Thr Gln Val Gly Ile Thr Gly Ile Gly Ala Lys

180 185 190

Lys Thr His Ser Gly Ile Ser Asp Gln Lys Gly Ala Leu Arg Lys Asn
195 200 205

Leu Ala Thr Ala Gln Ser Leu Glu Lys Glu Leu Ala Gly Ser Lys Leu
210 215 220

Gly Leu Asn Lys Gln Ile Asp Thr Asn Ile Thr Ser Pro Gln Thr Asn
225 230 235 240

Ser Ser Thr Lys Phe Leu Gly Lys Asn Lys Leu Ala Pro Asp Asn Ile
245 250 255

Ser Leu Ser Thr Glu His Lys Thr Ser Leu Ser Ser Pro Asp Ile Ser
260 265 270

Leu Gln Asp Lys Ile Asp Thr Gln Arg Arg Thr Tyr Glu Leu Asn Thr
275 280 285

Leu Ser Ala Gln Gln Lys Gln Asn Ile Gly Arg Ala Thr Met Glu Thr
290 295 300

Ser Ala Val Ala Gly Asn Ile Ser Thr Ser Gly Gly Arg Tyr Ala Ser
305 310 315 320

Ala Leu Glu Glu Glu Glu Gln Leu Ile Ser Gln Ala Ser Ser Lys Gln
325 330 335

Ala Glu Glu Ala Ser Gln Val Ser Lys Glu Ala Ser Gln Ala Thr Asn
340 345 350

Gln Leu Ile Gln Lys Leu Leu Asn Ile Ile Asp Ser Ile Asn Gln Ser
355 360 365

Lys Asn Ser Ala Ala Ser Gln Ile Ala Gly Asn Ile Arg Ala
370 375 380

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<213> Shigella Flexneri

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Trp Glu Lys Gln Ala Leu Pro Gly Glu Glu Arg Asp Glu Ala Val Ser
        35                  40                  45

Arg Leu Lys Glu Cys Leu Ile Asn Asn Ser Asp Glu Leu Arg Leu Asp
    50                  55                  60

Arg Leu Asn Leu Ser Ser Leu Pro Asp Asn Leu Pro Ala Gln Ile Thr
65                  70                  75                  80

Leu Leu Asn Val Ser Tyr Asn Gln Leu Thr Asn Leu Pro Glu Leu Pro
                85                  90                  95

Val Thr Leu Lys Lys Leu Tyr Ser Ala Ser Asn Lys Leu Ser Glu Leu
            100                 105                 110

Pro Val Leu Pro Pro Ala Leu Glu Ser Leu Gln Val Gln His Asn Glu
        115                 120                 125

Leu Glu Asn Leu Pro Ala Leu Pro Asp Ser Leu Leu Thr Met Asn Ile
    130                 135                 140

Ser Tyr Asn Glu Ile Val Ser Leu Pro Ser Leu Pro Gln Ala Leu Lys
145                 150                 155                 160

Asn Leu Arg Ala Thr Arg Asn Phe Leu Thr Glu Leu Pro Ala Phe Ser
                165                 170                 175

Glu Gly Asn Asn Pro Val Val Arg Glu Tyr Phe Phe Asp Arg Asn Gln
            180                 185                 190

Ile Ser His Ile Pro Glu Ser Ile Leu Asn Leu Arg Asn Glu Cys Ser
        195                 200                 205
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Ile His Ile Ser Asp Asn Pro Leu Ser Ser His Ala Leu Gln Ala Leu
210 215 220

Gln Arg Leu Thr Ser Ser Pro Asp Tyr His Gly Pro Arg Ile Tyr Phe
225 230 235 240

Ser Met Ser Asp Gly Gln Gln Asn Thr Leu His Arg Pro Leu Ala Asp
245 250 255

Ala Val Thr Ala Trp Phe Pro Glu Asn Lys Gln Ser Asp Val Ser Gln
260 265 270

Ile Trp His Ala Phe Glu His Glu Glu His Ala Asn Thr Phe Ser Ala
275 280 285

Phe Leu Asp Arg Leu Ser Asp Thr Val Ser Ala Arg Asn Thr Ser Gly
290 295 300

Phe Arg Glu Gln Val Ala Ala Trp Leu Glu Lys Leu Ser Ala Ser Ala
305 310 315 320

Glu Leu Arg Gln Gln Ser Phe Ala Val Ala Ala Asp Ala Thr Glu Ser
325 330 335

Cys Glu Asp Arg
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<210> 14

<211> 196

<212> PRT

<213> Shigella Flexneri

<400> 14

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1 5 10 15

Asn Asn Ser His Ala Gly Ile Val Thr Glu Pro Ile Leu Gly Lys Leu
20 25 30

Ile Gly Gln Gly Ser Thr Ala Glu Ile Phe Glu Asp Val Asn Asp Ser
35 40 45

Ser Ala Leu Tyr Lys Lys Tyr Asp Leu Ile Gly Asn Gln Tyr Asn Glu
50 55 60

Ile Leu Glu Met Ala Trp Gln Glu Ser Glu Leu Phe Asn Ala Phe Tyr
65 70 75 80

Gly Asp Glu Ala Ser Val Val Ile Gln Tyr Gly Gly Asp Val Tyr Leu
85 90 95

Arg Met Leu Arg Val Pro Gly Thr Pro Leu Ser Asp Ile Asp Thr Ala
100 105 110

Asp Ile Pro Asp Asn Ile Glu Ser Leu Tyr Leu Gln Leu Ile Cys Lys
115 120 125

Leu Asn Glu Leu Ser Ile Ile His Tyr Asp Leu Asn Thr Gly Asn Met
130 135 140

Leu Tyr Asp Lys Glu Ser Glu Ser Leu Phe Pro Ile Asp Phe Arg Asn
145 150 155 160

Ile Tyr Ala Glu Tyr Tyr Ala Ala Thr Lys Lys Asp Lys Glu Ile Ile
165 170 175

Asp Arg Arg Leu Gln Met Arg Thr Asn Asp Phe Tyr Ser Leu Leu Asn
180 185 190

Arg Lys Tyr Leu
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<210> 15

<211> 352

<212> DNA

<213> Shigella Flexneri

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gcctatgatt gggcagtacg tggactctca gtggagcctg gcgagcttca ctgtgcctgc 180

tgagtcagct tgcatctgcg ccttcggtcg caatacttcc aagaacgtca actctgtcat 240

tgccatctgc gtagatggga ccttccacaa atatgtcttc actcctgatg gaaactgcaa 300

cagagaggct ttcgacgtgt accttgacat ctgtgatgat gatgactttt aa 352

<210> 16

<211> 1042

<212> DNA

<213> Shigella Flexneri

<400> 16

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tgaagggctc tttcagaatc ggcaacccaa tcaatgcacc cagtgcagct gttcggaggg 120

aaacgtgtat tgtggtctca agacttgccc caaattaacc tgtgccttcc cagtctctgt 180

tccagattcc tgctgccggg tatgcagagg agatggagaa ctgtcatggg aacattctga 240

tggtgatatc ttccggcaac ctgccaacag agaagcaaga cattcttacc accgctctca 300

ctatgatcct ccaccaagcc gacaggctgg aggtctgtcc cgctttcctg gggccagaag 360

tcaccgggga gctcttatgg attcccagca agcatcagga accattgtgc aaattgtcat 420

caataacaaa cacaagcatg gacaagtgtg tgtttccaat ggaaagacct attctcatgg 480

cgagtcctgg cacccaaacc tccgggcatt tggcattgtg gagtgtgtgc tatgtacttg 540

taatgtcacc aagcaagagt gtaagaaaat ccactgcccc aatcgatacc cctgcaagta 600

tcctcaaaaa atagacggaa aatgctgcaa ggtgtgtcca ggtaaaaaag caaaagaact 660

tccaggccaa agctttgaca ataaaggcta cttctgcggg gaagaaacga tgcctgtgta 720

tgagtctgta ttcatggagg atggggagac aaccagaaaa atagcactgg agactgagag 780

accacctcag gtagaggtcc acgtttggac tattcgaaag ggcattctcc agcacttcca 840

tattgagaag atctccaaga ggatgtttga ggagcttcct cacttcaagc tggtgaccag 900

aacaaccctg agccagtgga agatcttcac cgaaggagaa gctcagatca gccagatgtg 960

ttcaagtcgt gtatgcagaa cagagcttga agatttagtc aaggttttgt acctggagag 1020

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<211> 275

<212> DNA

<213> Shigella Flexneri

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<223> misc_feature

<400> 17

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gttggtgncn ggcctccnta ngntgtgnna cgaagactgt tntttgctaa ggacctgcng 180

tntgctgctt cattnggnga gntttnntta gggggngnnt tattnctaaa atnttgggac 240

tcttaagttt tngntgnggt ttttntngnn aagaa 275

<210> 18

<211> 1246

<212> DNA

<213> Shigella Flexneri

<400> 18

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gctcctcatc ttatcctttt tggactatcg ggatctaatc aactgttgtt atgtcagtcg 120

aagacttagc cagctatcaa gtcatgatcc gctgtggaga agacattgca aaaaatactg 180

gctgatatct gaggaagaga aaacacagaa gaatcagtgt tggaaatctc tcttcataga 240

tacttactct gatgtaggaa gatacattga ccattatgct gctattaaaa aggcctggga 300

tgatctcaag aaatatttgg agcccaggtg tcctcggatg gttttatctc tgaaagaggg 360

tgctcgagag gaagacctcg atgctgtgga agcgcagatt ggctgcaagc ttcctgacga 420

ttatcgatgt tcataccgaa ttcacaatgg acagaagtta gtggttcctg ggttattggg 480

aagcatggca ctgtctaatc actatcgttc tgaagatttg ttagacgtcg atacagctgc 540

cggaggattc cagcagagac agggactgaa atactgtctc cctttaactt tttgcataca 600

tactggtttg agtcagtaca tagcagtgga agctgcagag ggccgaaaca aaaatgaagt 660

tttctaccaa tgtccagacc aaatggctcg aaatccagct gctattgaca tgtttattat 720

aggtgctact tttactgact ggtttacctc ttatgtcaaa aatgttgtat caggtggctt 780

ccccatcatc agagaccaaa ttttcagata tgttcacgat ccagaatgtg tagcaacaac 840

tggggatatt actgtgtcag tttccacatc gtttctgcca gaacttagct ctgtacatcc 900

accccactat ttcttcacat accgaatcag gattgaaatg tcaaaagatg cacttcctga 960

gaaggcctgt cagttggaca gtcgctattg gagaataaca aatgctaagg gtgacgtgga 1020

agaagttcaa ggacctggag tagttggtga atttccaatc atcagcccag gtcgggtata 1080

tgaatacaca agctgtacca cattctctac aacatcagga tacatggaag gatattatac 1140

cttccatttt ctttacttta aagacaagat ctttaatgtt gccattcccc gattccatat 1200

ggcatgtcca acattcaggg tgtctatagc ccgattggta agttaa 1246

<210> 19

<211> 786

<212> DNA

<213> Shigella Flexneri

<400> 19

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ccaaaatgaa ggcttgacta ttgacctgaa gaattttaga aaaccaggag agaagacctt 120

cacccaacga agccgtcttt ttgtgggaaa tcttcctccc gacatcactg aggaagaaat 180

gaggaaacta tttgagaaat atggaaaggc aggcgaagtc ttcattcata aggataaagg 240

atttggcttt atccgcttgg aaacccgaac cctagcggag attgccaaag tggagctgga 300

caatatgcca ctccgtggaa agcagctgcg tgtgcgcttt gcctgccata gtgcatccct 360

tacagttcga aaccttcctc agtatgtgtc caacgaactg ctggaagaag ccttttctgt 420

gtttggccag gtagagaggg ctgtagtcat tgtggatgat cgaggaaggc cctcaggaaa 480

aggcattgtt gagttctcag ggaagccagc tgctcggaaa gctctggaca gatgcagtga 540

aggctccttc ctgctaacca catttcctcg tcctgtgact gtggagccca tggaccagtt 600

agatgatgaa gagggacttc cagagaagct ggttataaaa aaccagcaat ttcacaagga 660

acgagagcag ccacccagat ttgcacagcc tggctccttt gagtatgaat atgccatgcg 720

ctggaaggca ctcattgaga tggagaagca gcagcaggac caagtggacc gcaacatcaa 780

ggaggc 786

<210> 20

<211> 622

<212> DNA

<213> Shigella Flexneri

<400> 20

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tgaaatcgag gccaatcttg aagagttcga catcagcgag gatgacattg atgatggagt 120

caggagactg tttgcccagt tggcaggaga ggatgcggag atctctgcct ttgagctgca 180

gaccatcctg agaagggttc tagcaaagcg ccaagatatc aagtcagatg gcttcagcat 240

cgagacatgc aaaattatgg ttgacatgct agattcggac gggagtggca agctggggct 300

gaaggagttc tacattctct ggacgaagat tcaaaaatac caaaaaattt accgagaaat 360

cgacgttgac aggtctggta ccatgaattc ctatgaaatg cggaaggcat tagaagaagc 420

aggtttcaag atgccctgtc aactccacca agtcatcgtt gctcggtttg cagatgacca 480

gctcatcatc gattttgata attttgttcg gtgtttggtt cggctggaaa cgctattcaa 540

gatatttaag cagctggatc ccgagaatac tggaacaata gagctcgacc ttatctcttg 600

gctctgtttc tcagtacttt ga 622

<210> 21

<211> 473

<212> DNA

<213> Shigella Flexneri

<400> 21

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aagcggtgcg caggctgcgg gggcaagatt gcggaccgct ttctgctcta tgccatggac 120

agctattggc acagccggtg cctcaagtgc tcctgctgcc aggcgcagct gggcgacatc 180

ggcacgtcct gttacaccaa aagtggcatg atcctttgca gaaatgacta cattaggtta 240

tttggaaata gcggtgcttg cagcgcttgc ggacagtcga ttcctgcgag tgaactcgtc 300

atgagggcgc aaggcaatgt gtatcatctt aagtgtttta catgctctac ctgccggaat 360

cgcctggtcc cgggagatcg gtttcactac atcaatggca gtttattttg tgaacatgat 420

agacctacag ctctcatcaa tggccatttg aattcacttc agagcaatcc act 473

<210> 22

<211> 365

<212> DNA

<213> Shigella Flexneri

<400> 22

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gaaagcccgc tgggaggccg agcgcgccga gttacaggct caggtggcct tccttcaggg 120

agagaggaaa gggcaggaga atctaaagac ggacctggtg cggcggatca agatgctaga 180

gtatgcgctg aagcaggaaa gggccaaata tcataaactg aagtttggga cagacctgaa 240

ccaggggggag aagaaagcag atgtgtcaga acaagtctcc aatggccccg tggaatcggt 300

caccctggag aacagcccgt tggtgtggaa ggaggggcgg cagcttctcc gacagtacct 360

ggaag 365

<210> 23

<211> 1011

<212> DNA

<213> Shigella Flexneri

<400> 23

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ctgcggccgg cagccggcag ctttgcagcg gtgtgttcta ggtcagtggc ttcaaagact 120

ccagttggat tcattggact gggcaacatg gggaatccaa tggcaaaaaa tctcatgaaa 180

catggctatc cacttattat ttatgatgtg ttccctgatg cctgcaaaga gtttcaagat 240

gcaggtgaac aggtagtatc ttccccagca gatgttgctg aaaaagctga cagaattatt 300

acaatgctgc ccaccagtat caatgcaata gaagcttatt ccggagcaaa tgggattcta 360

aaaaaagtga agaagggctc attattaata gattccagca ctattgatcc tgcagtttca 420

aaagaattgg ccaaagaagt tgagaaaatg ggagcagttt tcatggatgc ccctgtttct 480

ggtggtgtag gagctgcacg atctgggaac ctcacgttta tggtgggagg agttgaagat 540

gaatttgctg ctgcccaaga gttgctgggg tgcatgggct ccaacgtggt gtactgtgga 600

gctgttggga ctgggcaggc ggcaaagatc tgcaacaaca tgctgttagc tattagtatg 660

attggaactg ctgaagctat gaatcttgga atcaggttag ggcttgaccc aaaactactg 720

gctaaaatcc taaatatgag ctcaggacgg tgttggtcaa gtgacactta taatcctgta 780

cctggagtga tggatggcgt tccctcggct aataactatc agggtggatt tggaacaaca 840

ctcatggcta aggatctggg attggcacaa gactctgcta ccagcacaaa gagcccaatc 900

cttcttggca gtctggccca tcagatctac aggatgatgt gtgcaaaggg ctactcaaag 960

aaagacttct catccgtgtt ccagttccta cgagaggagg agaccttctg a 1011

<210> 24

<211> 682

<212> DNA

<213> Shigella Flexneri

<400> 24

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gccagtagcc attagggagt ttcaaaaaac agaagatatg agaagatact tacatcaaaa 180

cagggttcca gctgagccat cttccctcct gtcactatca gcaagtcaca atcagctgtc 240

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ggctcagctt gctgccctgc agtatgagga ggagaaaata aggaccaagc agatccagag 360

agatgctgtc ctggactttg tcaaacaaaa agcatcacaa agtccacaaa aacagcaccc 420

gctcctagat ggcgtagatg gtgagtgccc cttcccatcc agaaggtctc agcacactga 480

tgatagtgcc ttgtgcatgt cgctgtcagg gttgaatcaa gtgggctgtg ctgctaccct 540

gcctcattct tctgccttca cgcctcttaa gagtgatgac agacctaatg ctctattaag 600

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gagaaatcag cctcagcgcc ct 682

<210> 25

<211> 704

<212> DNA

<213> Shigella Flexneri

<400> 25
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acagtgtctt gtccttctat ttgctgtcat tctcttaagc tactacatat aacagacaat 120

aacctccaag actggactga aatacgaaag ttaggagtta tgtttccttc actggatacc 180

ctcgtcctgg ccaacaatca tttgaatgct attgaggagc ctgatgattc attggccagg 240

ttgtttccta atcttcgatc catcagcctc cacaagtcag gtttgcagtc ctgggaagac 300

attgataaac taaattcatt tcccaaactg gaagaagtga gattgttagg aattcctctt 360

ctgcagccat ataccaccga ggagcgaagg aaattggtaa tagccagatt gccatcagtt 420

tccaaactta atggcagcgt tgttactgat ggtgaacgag aagattctga gagatttttt 480

attcgttact atgtggatgt tccacaggaa gaagtgccat tcaggtatca tgaactgatc 540

actaaatatg ggaagttgga gcctttggca gaagtggacc taagacccca gagcagtgca 600

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gtggcagaac taaagaaaca gttaaaaact ctagtacaat tacc 704

<210> 26

<211> 430

<212> DNA

<213> Shigella Flexneri

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catcggggac cgctacttcc tgaaggccat cgaccagtac tggcacgagg actgcctgag 120

ctgcgacctc tgtggctgcc ggctgggtga ggtggggcgg cgcctctact acaaactggg 180

ccggaagctc tgccggagag actatctcag gctttttggg caagacggtc tctgcgcatc 240

ctgtgacaag cggattcgtg cctatgagat gacaatgcgg gtgaaagaca aagtgtatca 300

cctggaatgt ttcaagtgcg ccgcctgtca gaagcatttc tgtgtaggtg acagatacct 360

cctcatcaac tctgacatag tgtgcgaaca ggacatctac gagtggacta agatcaatgg 420

gatgatatag 430

<210> 27

<211> 407

<212> DNA

<213> Shigella Flexneri

<400> 27

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gcaagactct ttagatgtcg tggactcttc ggtctcctct ttatgtctgt ctaacacggc 120

atcatctcat gggaccagaa aactatttca gatttattcc aaatctccat tctaccgagc 180

tgcctcaggt aatgaggccc tgggaatgga aggaccattg ggccagacca aattcctgga 240

agacaagcct cagttcatca gcagaggaac cttcaacccg gaaaagggca aacaaaaatt 300

aaagaatgtg aaaaactcac ctcagaaaac caaagagacc ccagagggga cagtcatgtc 360

tggccgcaga aaaactgtgg acccagactg cacctccaac caacagc 407

<210> 28

<211> 620

<212> DNA

<213> Shigella Flexneri

<400> 28

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cattcatatg gttaccatgg ggatgatgga cattcgtttt gttcttctgg aactggacaa 120

ccttatggac caactttcac tactggtgat gtcattggct gttgtgttaa tcttatcaac 180

aatacctgct tttacaccaa gaatggacat agtttaggta ttgctttcac tgacctaccg 240

ccaaatttgt atcctactgt ggggcttcaa acaccaggag aagtggtcga tgccaatttt 300

gggcaacatc ctttcgtgtt tgatatagaa gactatatgc gggagtggag aaccaaaatc 360

caggcacaga tagatcgatt tcctatcgga gatcgagaag gagaatggca gaccatgata 420

caaaaaatgg tttcatctta tttagtccac catgggtact gtgccacagc agaggccttt 480

gccagatcta cagaccagac cgttctagaa gaattagctt ccattaagaa tagacaaaga 540

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tacccaagtt tacttgaaag 620

<210> 29

<211> 290

<212> DNA

<213> Shigella Flexneri

<400> 29

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tctcctccaa aggatcaaaa ctcctcgcca gcaagggaac aaaaccagat ggagaatgag 180

tttgatgaat tgacagaagt aggcttcaga aggtgggtaa taacaagtaa gctaaaggag 240

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<210> 30

<211> 248

<212> DNA

<213> Shigella Flexneri

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<223> misc_feature

<400> 30

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gctgacagac acagagcagg gtctctcgtg gaacaggagt tgtctggtct gttcagtttg 180

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ggnngnnn 248

<210> 31

<211> 1296

<212> DNA

<213> Shigella Flexneri

<400> 31
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gggatcatgc tgcctgtgct gggcatcaag tctctgtctc cctttgccat cacatacctg 120

gatcggctgc tcctgatgca tcccaacctt accaagggct tcggcatgat tggccccaag 180

gacttcttcc cacttctgga ctttgcctat atgccgaaca actccctgac acccagcctg 240

caggagcagc tgtgtcagct ctacccccga ctgaaagtgc tggcatttgg agcaaagccg 300

gattccaccc tgcataccta cttcccttct ttcctgtcca gagccacccc tagctgtccc 360

cctgagatga agaaagagct cctgagcagc ctgactgagt gcctgacggt ggacccccctc 420

agtgccagcg tctggaggca gctgtaccct aagcacctgt cacagtccag ccttctgctg 480

gagcacttgc tcagctcctg ggagcagatt cccaagaagg tacagaagtc tttgcaagaa 540

accattcagt ccctcaagct taccaaccag gagctgctga ggaagggtag cagtaacaac 600

caggatgtcg tcacctgtga catggcctgc aagggcctgt tgcagcaggt tcagggtcct 660

cggctgccct ggacgcggct cctcctgttg ctgctggtct tcgctgtagg cttcctgtgc 720

catgacctcc ggtcacacag ctccttccag gcctccctta ctggccggtt gcttcgatca 780

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cggcccagct tgcagctggc ctgggctcac accaatgcca cagtcagctt cctttctgcc 960

cactgtgcct ctcaccttgc gtggtttggt gacagtctca ccagtctctc tcagaggcta 1020

cagatccagc tccccgattc cgtgaatcag ctactccgct atctgagaga gctgcccctg 1080

cttttccacc agaatgtgct gctgccactg tggcacctct tgcttgaggc cctggcctgg 1140

gcccaggagc actgccatga ggcatgcaga ggtgaggtga cctgggactg catgaagaca 1200

cagctcagtg aggctgtcca ctggacctgg ctttgcctac aggacattac agtggctttc 1260

ttggactggg cacttgccct gatatcccag cagtag 1296

<210> 32

<211> 476

<212> DNA

<213> Shigella Flexneri

<400> 32
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cattcatatg gttaccatgg ggatgatgga cattcgtttt gttcttctgg aactggacaa 120

ccttatggac caactttcac tactggtgat gtcattggct gttgtgttaa tcttatcaac 180

aatacctgct tttacaccaa gaatggacat agtttaggta ttgctttcac tgacctaccg 240

ccaaatttgt atcctactgt ggggcttcaa acaccaggag aagtggtcga tgccaatttt 300

gggcaacatc ctttcgtgtt tgatatagaa gactatatgc gggagtggag aaccaaaatc 360

caggcacaga tagatcgatt tcctatcgga gatcgagaag gagaatggca gaccatgata 420

caaaaaatgg tttcatctta tttagtccac catgggtact gtgccacagc agaggc 476

<210> 33

<211> 1571

<212> DNA

<213> Shigella Flexneri

<400> 33
caccaaccta aagagacagg ctaacaagaa gagtgagggc agcctggcct atgtgaaagg 60

cggtctcagt acattcttcg aagcacagga tgccctctca gccatccatc aaaaactaga 120

agcagatgga acggaaaaag tagaaggatc catgacgcag aaactggaga atgttctgaa 180

cagagcaagt aatactgcag acacattgtt tcaagaagta ttaggtcgga aagacaaggc 240

agattccact agaaatgcac tcaatgtgct tcagcgattt aagtttcttt tcaaccttcc 300

tctaaatatt gaaaggaata ttcaaaaggg tgattatgat gtggttatta atgattatga 360

aaaggccaag tcacttttg ggaaaacgga ggtgcaagtt ttcaagaaat attatgctga 420

agtagaaaca aggattgaag ctttaagaga attacttctg gataaattgc ttgagacacc 480

atcaacttta catgaccaaa aacgttacat aaggtacctg tctgaccttc atgcgtctgg 540

tgaccctgct tggcaatgca ttggagccca acacaagtgg atccttcagc tcatgcacag 600

ttgcaaagag ggctacgtga aagatctgaa aggtaaccca ggcctgcaca gtcccatgtt 660

ggatcttgat aatgatacac gtccctcagt gttgggccat ctcagtcaga cagcgtccct 720

gaagaggggc agcagctttc agtctggtcg agacgacacg tggagataca aaactcccca 780

cagggtggcc tttgttgaaa aattgacaaa actcgtcttg agccagctgc ctaacttctg 840

gaaactctgg atctcctacg ttaatggaag cctcttcagt gagactgctg agaagtcagg 900

ccagattgaa agatcaaaga atgtaaggca aagacaaaat gattttaaga aaatgattca 960

ggaagtaatg cactccctgg tgaagcttac ccgcggagcc ctgcatcccc tcagcatccg 1020

ggatggggaa gccaagcagt acggaggctg ggaggtgaag tgcgagctct ccggacagtg 1080

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tcctaatgac ctgttacaga ctatccagga tctcatcttg gatctccgag tacgttgcgt 1200

aatggccacg ttgcagcaca cggcggaaga aataaagaga ttagctgaaa aagaagactg 1260

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ttctctgcag tcactgaagg gggttctgga gtgcaagccg ggagaggcta gtgtcttcca 1380

acaacctaaa acacaggagg aggtttgcca gctaagcatc aatataatgc aggtttttat 1440

atactgtctg gaacagttga gcaccaagcc tgatgcagat atagatacta cacatctctc 1500

tgttgatgtt tcttcccctg acttgtttgg aagtatccat gaagacttca gcttgacctc 1560

agaacagcgc c 1571

<210> 34

<211> 306

<212> DNA

<213> Shigella Flexneri

<220>

<221> MISC_FEATURE

<222> (101)..(101)

<223> MISC_FEATURE

<220>

<221> MISC_FEATURE

<222> (273)..(273)

<223> MISC_FEATURE

<220>

<221> MISC_FEATURE

<222> (306)..(306)

<223> MISC_FEATURE

<400> 34
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gataaagcag aaaaaagata taagtataca gttaagctca ncccagtctc gttgtactct 120

tctagagaag caactagaat atacaaagag aatggttctc aacgtaggag cgagaaaaga 180

acatgatcct agaacaacag gcccagcttc agagggaaaa agaacaagat cagatgaagc 240

tgtatgcaaa acttgaaaag cttgatgtct tanaaaaaga gtgtttcaga cttacaacaa 300

ctcagn 306

<210> 35

<211> 291

<212> DNA

<213> Shigella Flexneri

<400> 35
ccctgaaatc tgcaaaatgg ctgataattt ggatgaattt attgaagagc aaaaagccag 60

attggccgaa gacaaagcag agttggaaag tgatccacct tacatggaaa tgaagggaaa 120

gttgtcagcg aagctttctg aaaacagtaa gatactgatc tctatggcta aggaaaacat 180

accaccaaat agtcaacaga ccaggggttc cttaggaatt gattatggat taagtttacc 240

acttggagaa gactatgaac ggaagaaaca taaattaaaa gaagaattgc g 291

<210> 36

<211> 387

<212> DNA

<213> Shigella Flexneri

<400> 36
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gttcgaggag aaacgccttc gcttcttccg ggaggttctg ctggaggttc agaagcacct 120

aaacctgtcc aatgtggctg gttacaaagc catttaccat gacctggagc agagcatcag 180

agcagctgat gcagtggagg acctgaggtg gttccgagcc aatcacgggc caggcatggc 240

catgaactgg ccgcagtttg aggagtggtc cgcagacctg attcgaaccc tcagccggag 300

agagaagaag aaggccactg acggcttcac cctgacgggc atcaaccaga caggcgacca 360

gtttttgccg agtaagccca gcagcac 387

<210> 37

<211> 638

<212> DNA

<213> Shigella Flexneri

<400> 37
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gaccgagatg atggaaaggt gtaagaaact aggaaacaat gccttgctgt tgaattctgt 120

gatgtctgcc ttccgggctg agttcatcgc cacaaggtct atggatttca ttggcatgat 180

taaagagtgt gatgaatctg gtttccccaa gcatcttctt tttcgatcac tgggattaaa 240

cttggccttg gctgatcctc ctgagagtga ccgacttcag attctcaacg aagcttggaa 300

agtcatcact aagctgaaga acccacagga ctacattaat tgtgccgaag tgtgggtgga 360

atacacctgc aagcatttca cgaaacgaga ggtgaatacc gttttggcag atgtcatcaa 420

gcacatgact ccagatcgtg catttgaaga ttcctacccc cagcttcagt taataattaa 480

gaaagttatt gcccacttcc atgacttctc agttcttttc tcagtggaaa aatttctgcc 540

gtttctggac atgttccaaa aagagagtgt gcgggtggag gtttgcaaat gcatcatgga 600

cgcctttatc aagcatcaac aagagcccac caaggacc 638

<210> 38

<211> 470

<212> DNA

<213> Shigella Flexneri

<400> 38
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gaaatgcttt aaaaattgtt acggagaaaa tcatcagaga ctggtccaca taaaaggaaa 120

ttgtgggaaa gagaaggtac tgtttctaag actctactta cttcaaggga tccgaaacta 180

tcacagtgga aatgatgtag aggcttatga gtatcttaac aggcacgtca gctctttaaa 240

gagctatata ttgatccatc aaaagtggac aatttgttgc agttggggtt tactgcccag 300

gaagcaccgg cttggcctga gggcgtgtga tgggaacgtg gatcatgcgg ccactcatat 360

taccaaccgc agagaggaac tggcccaaat aaggaaggag gaaaaagaga agaaaagacg 420

ccgcctcgag aacatcaggt ttctgaaagg gatgggctac tccacgcacg 470

<210> 39

<211> 352

<212> DNA

<213> Shigella Flexneri

<400> 39
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gtgcaaagac tttgtggaca aaattggcca gtttcagaaa atagttggtg gtttaattga 120

gcttgttgat caacttgcaa aagaagcaga aaatgaaaag atgaaggcca tcggtgctcg 180

gaacttgctc aaatctatag caaagcagag agaagctcaa cagcagcaac ttcaagccct 240

aatagcagaa aagaaaatgc agctagaaag gtatcgggtt gaatatgaag ctttgtgtaa 300

agtagaagca gaacaaaatg aatttattga ccaatttatt tttcagaaat ga 352

<210> 40

<211> 1026

<212> DNA

<213> Shigella Flexneri

<400> 40
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aaaattcatg ccgaagtcca acttaagaat tatgggaaat ttcttgagga gtatacctct 120

caactgagaa gaattgagga cgctctggat gactcaattg gagatgtttg ggatttcaat 180

cttgatccta tagcattaaa gcttttgcct tatgaacagt cctctctttt ggaactcata 240

aagactgaaa acaaggtctt aaacaaagtc atcactgttt atgctgcact ttgttgtgaa 300

atcaagaaat taaaatatga ggctgaaact aaatttttaca atggtctctt gttttatgga 360

gaaggagcta cagatgccag catggtggaa ggtgattgcc aaattcaaat ggggagattt 420

atttcattct tacaggaact gtcttgcttt gttacgaggt gctatgaagt ggtgatgaac 480

gtagtccacc agttggctgc cctctatatc agtaacaaga ttgcacccaa aattatagag 540

acaactggag ttcattttca gactatgtat gagcacttgg gagaactgct aacagttttg 600

ctcaccctgg atgaaattat tgataatcat atcacactga aagaccactg gactatgtac 660

aaaaggttac tgaaatctgt ccatcacaat ccttcaaaat ttggaattca ggaagaaaaa 720

ttaaagccat ttgaaaagtt cttgctgaag ctagaagggc aattactgga tggaatgata 780

ttccaggcct gtatagaaca acaatttgat tctctcaatg gaggagtatc tgtgtcaaaa 840

aatagtactt ttgctgagga atttgcacat agtattcggt caatttttgc aaatgtagaa 900

gccaaacttg gagaaccttc tgaaattgac cagagagaca agtatgttgg aatttgtgga 960

ctctttgtat tgcactttca gatttttcga actattgata aaaagtttta taagtcttta 1020

ttggac 1026

<210> 41

<211> 741

<212> DNA

<213> Shigella Flexneri

<400> 41
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tgtctctgcg ctccacattc tcactgcccg aggaggagga ggagccggag ccactggtgt 120

ttgcggagca gccctcggtg aagctgtgct gtcagctctg ctgcagcgtc ttcaaagacc 180

ccgtgatcac cacgtgtggg cacacgttct gtaggagatg cgccttgaag tcagagaagt 240

gtcccgtgga caacgtcaaa ctgaccgtgg tggtgaacaa catcgcggtg gccgagcaga 300

tcggggagct cttcatccac tgccggcacg gctgccgggt agcgggcagc gggaagcccc 360

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accacgaggg cagctgtgac tacaggcctg tgcggtgtcc caacaacccc agctgccccc 480

cgctgctcag gatgaacctg gaggcccacc tcaaggagtg cgagcacatc aaatgccccc 540

actccaagta cgggtgcacg ttcatcggga accaggacac ttacgagacc cacctggaga 600

cttgccgctt cgagggcctg aaggagtttc tgcagcagac ggatgaccgc ttccacgaga 660

tgcacgtggc tctggcccag aaggaccagg agatcgcctt cctgcgctcc atgctgggaa 720

agctctcgga gaagatcgac c 741

<210> 42

<211> 136

<212> DNA

<213> Shigella Flexneri

<400> 42
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gaagggtttg gaagagacag tggcaaaaga acttcagact ttacacaacc tgcgcaaact 120

ctttgttcag gacctg 136

<210> 43

<211> 1137

<212> DNA

<213> Shigella Flexneri

<400> 43
atggaggagt atgagaagtt ctgtgaaaaa agtcttgcca gaatacaaga agcatcacta 60

tccacagaga gctttctccc tgctcagtct gaaagtatct cacttattcg ctttcatgga 120

gtggctatcc tttctccact gcttaacatt gagaaaagaa aggaaatgca acaagaaaag 180

cagaaagcac ttgatgtaga agcaagaaag caggttaaca ggaagaaagc tttactgact 240

cgtgtccagg agattcttga caatgttcag gttagaaaag cacctaatgc cagtgatttt 300

gatcagtggg agatggaaac agtttactct aattcagaag tcagaaactt gaatgttcct 360

gctacatttc caaatagctt tccaagccat acggaacact ctactgcagc aaagcttgat 420

aagatagctg ggattttgcc attggataat gaggaccaat gtaaaactga tggaatagac 480

ttagctagag attcagaagg atttaattct ccgaagcaat gtgatagttc caatattagt 540

catgtagaaa atgaagcttt tccaaagacc tcttcagcaa ccccacaaga aactcttatt 600

tctgatggtc ccttctcagt aaatgaacaa caggatctac cacttttggc agaagtcatc 660

ccagatccct atgtaatgag tcttcagaat ctgatgaaaa agtcaaagga atatatagaa 720

agagaacaat ctagacgcag tctgagaggt agtatgaaca gaattgttaa tgagagtcat 780

ttagacaaag aacatgatgc tgttgaagtg gctgactgtg taaaagagaa aggccagttg 840

acaggcaaac actgtgtctc agttattcct gacaaaccaa gccttaataa atcaaatgtt 900

cttctccaag gtgcttccac tcaagcaagc agcatgagta tgccagtttt agctagcttt 960

tcgaaagtgg acatacctat acgaactggc catcccactg ttctagagtc taattctgat 1020

tttaaagtta ttcccactat tgttaccgaa aataatgtta tcaaaagtct tacaggttca 1080

tatgccaaat tacctagtcc agagccaagt atgagtccta aaatgcaccg aagacgt 1137

<210> 44

<211> 802

<212> DNA

<213> Shigella Flexneri

<400> 44

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gcctgtagga tccactggcg tcatcaagtc accaagctgg caacggccaa accaaggagt 120

accttccact ggaagaatct caaacagcgc tacttactca ggatcagtgg caccagccaa 180

ctcagctttg ggacaaaccc agccaagtga ccaggacact ttagtgcaaa gagctgagca 240

cattccagca gggaaacgaa ctccgatgtg cgcccattgt aaccaggtca tcagaggacc 300

attcttagtg gcactgggga aatcttggca cccagaagaa ttcaactgcg ctcactgcaa 360

aaatacaatg gcctacattg gatttgtaga ggagaaagga gccctgtatt gtgagctgtg 420

ctatgagaaa ttctttgccc ctgaatgtgg tcgatgccaa aggaagatcc ttggagaagt 480

catcaatgcg ttgaaacaaa cttggcatgt ttcctgtttt gtgtgtgtag cctgtggaaa 540

gcccattcgg aacaatgttt ttcacttgga ggatggtgaa ccctactgtg agactgatta 600

ttatgccctc tttggtacta tatgccatgg atgtgaattt cccatagaag ctggtgacat 660

gttcctggaa gctctgggct acacctggca tgacacttgc tttgtatgct cagtgtgttg 720

tgaaagtttg gaaggtcaga ccttttttctc caagaaggac aagcccctgt gtaagaaaca 780

tgctcattct gtgaattttt ga 802

<210> 45

<211> 713

<212> DNA

<213> Shigella Flexneri

<400> 45

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caagagactg cagtctcgca cagaggatag tgacaacctc tggtgggacg cctttgccac 120

tgaatttttt gaagatgacg ccacattaac cctttcattt tgtttggaag atggaccaaa 180

gcgatacact atcggcagga ccctcatccc ccgttacttt agcactgtgt ttgaaggagg 240

ggtgaccgac ctgtattaca ttctcaaaca ctcgaaagag tcataccaca actcatccat 300

cacggtggac tgcgaccagt gtaccatggt cacccagcac gggaagccca tgtttaccaa 360

ggtatgtaca gaaggcagac tgatcttgga gttcaccttt gatgatctca tgagaatcaa 420

aacatggcac tttaccatta gacaataccg agagttagtc ccgagaagca tcctagccat 480

gcatgcacaa gatcctcagg tcctggatca gctgtccaaa aacatcacca ggatggggct 540

aacaaacttc accctcaact acctcaggtt gtgtgtaata ttggagccaa tgcaggaact 600

gatgtcgaga cataaaactt acaacctcag tccccgagac tgcctgaaga cctgcttgtt 660

tcagaagtgg cagaggatgg tggctccgcc agcagaaccc acaaggcaac caa 713

<210> 46

<211> 681

<212> DNA

<213> Shigella Flexneri

<400> 46
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attgggaggc acacaccata tggcaaccaa actgactaca gaatatttga gcttaacaaa 120

cggcttcaga actggacaga ggagtgtgac aatctctggt gggatgcatt cacgactgag 180

ttctttgagg atgatgccat gttgaccatc actttctgcc tggaggatgg accaaagaga 240

tataccattg gccggaccct gatcccacgc tacttccgca gcatctttga ggggggtgct 300

acggagctgt actatgttct taagcacccc aaggaggcat tccacagcaa ctttgtgtcc 360

ctcgactgtg accagggcag catggtgacc cagcatggca agcccatgtt cacccaggtg 420

tgtgtggagg gccggttgta cctggagttc atgtttgacg acatgatgcg gataaagacg 480

tggcacttca gcatccggca gcaccgagag ctcatccccc gcagcatcct tgccatgcat 540

gcccaagacc cccagatgtt ggatcagctc tccaaaaaca tcactcggtg tgggctgtcc 600

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tcacgccaca agacctacag c 681

<210> 47

<211> 910

<212> DNA

<213> Shigella Flexneri

<400> 47
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gtatgaagca ttcgtccagc agcaccaggc tgaaaaaaca gaacgagaga atcggcttaa 120

agagttttac accagggagt atgaaaagct tcgggacact tacattgaag aagcagagaa 180

gtacaaaatg caattgcaag agcagtttga caacttaaat gctgcgcatg aaacctctaa 240

gttggaaatt gaagctagcc actcagagaa acttgaattg ctaaagaagg cctatgaagc 300

ctccctttca gaaattaaga aaggccatga aatagaaaag aaatcgcttg aagatttact 360

ttctgagaag caggaatcgc tagagaagca aatcaatgat ctgaagagtg aaaatgatgc 420

tttaaatgaa aaattgaaat cagaagaaca aaaaagaaga gcaagagaaa aagcaaattt 480

gaaaaatcct cagatcatgt atctagaaca ggagttagaa agcctgaaag ctgtgttaga 540

gatcaagaat gagaaactgc atcaacagga catcaagtta atgaaaatgg agaaactggt 600

ggacaacaac acagcattgg ttgacaaatt gaagcgtttc cagcaggaga atgaagaatt 660

gaaagctcgg atggacaagc acatggcaat ctcaaggcag ctttccacgg agcaggctgt 720

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ggagcttctg tggaaactgc acaatgggga cctgtgtagc cccaagagat cccccacatc 840

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acccagatga 910

<210> 48

<211> 1131

<212> DNA

<213> Shigella Flexneri

<400> 48

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tgctgggctg aatcaggcag ccacagaact ggtgcaggcc tctcggggaa cccctcagga 120

cctggctcga gcctcaggcc gatttggaca ggacttcagc accttcctgg aagctggtgt 180

ggagatggca ggccaggctc cgagccagga ggaccgagcc caagttgtgt ccaacttgaa 240

gggcatctcc atgtcttcaa gcaaacttct tctggctgcc aaggccctgt ccacggaccc 300

tgctgcccct aacctcaaga gtcagctggc tgcagctgcc agggcagtaa ctgacagcat 360

caatcagctc atcactatgt gcacccagca ggcacccggc cagaaggagt gtgataacgc 420

cctgcgggaa ttggagacgg tccgggaact cctggagaac ccagtccagc ccatcaatga 480

catgtcctac tttggttgcc tggacagtgt aatggagaac tcaaaggtgc tgggcgaggc 540

catgactggc atctcccaaa atgccaagaa cggaaacctg ccagagtttg gagatgccat 600

ttccacagcc tcaaaggcac tttgtggctt caccgaggca gctgcacagg ctgcatatct 660

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gtttgcccgt gcaaaccagg caattcagat ggcctgccag agtttgggag agcctggctg 780

tacccaggcc caggtgctct ctgcagccac cattgtggct aaacacacct ctgcactgtg 840

taacagctgt cgcctggctt ctgcccgtac caccaatcct actgccaagc gccagtttgt 900

acagtcagcc aaggaggtgg ccaacagcac agctaatctt gtcaagacca tcaaggcgct 960

agatggggcc ttcacagagg agaaccgtgc ccagtgccga gcagcaacag cccctctgct 1020

ggaggctgtg gacaatctga gtgcctttgc gtccaaccct gagttctcca gcattcctgc 1080

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<211> 298

<212> DNA

<213> Shigella Flexneri

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<223> MISC_FEATURE

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cgcctagtga gccagaagga tgacgtccac gtctgtatcc tttgtctcag agccatcatg 180

aactatcagt acggattcaa cctggtcatg tcccaccccc atgctgtcaa tgagattgca 240

cttagcctca ataacaagaa tccaaggacc aaagcccttg tcttagagct tctggcan 298

<210> 50

<211> 686

<212> DNA

<213> Shigella Flexneri

<400> 50
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gctccgccga gagaatgctg ccctccggcg gcggctggag gccctgctgg ctgaaaacag 180

cgagctcaag ttagggtctg gaaacaggaa ggtggtctgc atcatggtct tccttctctt 240

cattgccttc aactttggac ctgtcagcat cagtgagcct ccttcagctc ccatctctcc 300

tcggatgaac aaggggagc ctcaaccccg gagacacttg ctggggttct cagagcaaga 360

gccagttcag ggagttgaac ctctccaggg gtcctcccag ggccctaagg agccccagcc 420

cagccccaca gaccagccca gtttcagcaa cctgacagcc ttccctgggg gcgccaagga 480

gctactacta agagacctag accagctctt cctctcctct gattgccggc acttcaaccg 540

cactgagtcc ctgaggcttg ctgacgagtt gagtggctgg gtccagcgcc accagagagg 600

ccggaggaag atccctcaga gggcccagga gagacagaag tctcagccac ggaagaagtc 660

acctccagtt aaggcagtcc ccatcc 686

<210> 51

<211> 691

<212> DNA

<213> Shigella Flexneri

<400> 51

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ttcggaggat tttgaaaact ctccaagtct gacagcatct gagccaaccg cccattccaa 180

ggagtctctt gacagaacac tggacgcttt gtctgaatcc tcttcaagtg tgaagacaga 240

ccttccacaa acagccgagt ctaggaaaaa gtcgggcagg cacgtgacaa gagtgcttgt 300

gaaggacaca gctgtgcaga cgccagatcc tgccttcacc tacgagtgga ccaaggtggc 360

cagcatggca gccatggggc ctgccctggg aggcgcctac gtggacccga cacccatcgc 420

caatcatgtt atcagtgcag atgcaataga agccctgacc gcttacagcc cggccgtgct 480

ggcactccat gatgtgctga agcagcagct gagcctgacg cagcagttca tccaggccag 540

ccggcacctg cacgcctccc tcctgcgctc cctggacgcg gactccttcc actaccacac 600

cctggaggaa gccaaagagt acattaggtg ccacagacct gccccactga ccatggagga 660

tgccctggag gaggtgaaca aggagctgtg a 691

<210> 52

<211> 456

<212> DNA

<213> Shigella Flexneri

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aaggaggctc tgagacccct gcaagcagag gcccggcagc tccgcctgca aaacaggaac 180

ctggaggacc agatcgcact tgtgaggcaa aaacgagatg aagaggtgca gcagtacagg 240

gaacagctgg aggaaatgga agaacgccag aggcagttaa gaaatggggt gcaactccag 300

caacagaaga acaaagagat ggaacagcta aggctcagtc ttgctgaaga gctctctact 360

tataaggcta tgctactacc caagagcctg gaacaggctg atgctcccac ttctcaggca 420

ggtggaatgg agacacagtc tcaaggggct gtttag 456

<210> 53

<211> 794

<212> DNA

<213> Shigella Flexneri

<400> 53
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caacgtgctc agctgcgaag gctgcaaggg cttcttccgg cgcagtgtgg tccgtggtgg 180

ggccaggcgc tatgcctgcc ggggtggcgg aacctgccag atggacgctt tcatgcggcg 240

caagtgccag cagtgccggc tgcgcaagtg caaggaggca gggatgaggg agcagtgcgt 300

cctttctgaa gaacagatcc ggaagaagaa gattcggaaa cagcagcagc aggagtcaca 360

gtcacagtcg cagtcacctg tggggccgca gggcagcagc agctcagcct ctgggcctgg 420

ggcttcccct ggtggatctg aggcaggcag ccagggctcc ggggaaggcg agggtgtcca 480

gctaacagcg gctcaagaac taatgatcca gcagttggtg gcggcccaac tgcagtgcaa 540

caaacgctcc ttctccgacc agcccaaagt cacgccctgg cccctgggcg cagacccca 600

gtcccgagat gcccgccagc aacgctttgc ccacttcacg gagctggcca tcatctcagt 660

ccaggagatc gtggacttcg ctaagcaagt gcctggtttc ctgcagctgg gccgggagga 720

ccagatcgcc ctcctgaagg catccactat cgagatcatg ctgctagaga cagccaggcg 780

ctacaaccac gaga 794

<210> 54

<211> 392

<212> DNA

<213> Shigella Flexneri

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ctggtgctcc tggtgggcac cctccccgca gggaattgcg tggtgctgaa gccgtcagaa 180

atcagccagg gcacagagaa ggtcctggct gaggtgctgc cccagtacct ggaccagagc 240

tgctttgccg tggtgctggg cggaccccag gagacagggc agctgctaga gcacaagttg 300

gactacatct tcttcacagg gagccctcgt gtgggcaaga ttgtcatgac tgctgccacc 360

aagcacctga cgcctgtcac cctggagctg gg 392

<210> 55

<211> 346

<212> DNA

<213> Shigella Flexneri

<400> 55

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agcctccaga gaagtagaat ctgtagacct tccacactgc cacctgatta aaggaattga 120

agctggctct gaagatattg acatacttcc caatggtctg gctttttta gtgtgggtct 180

aaaattccca ggactccaca gctttgcacc agataagcct ggaggaatac taatgatgga 240

tctaaaagaa gaaaaaccaa gggcacggga attaagaatc agtcgtgggt ttgatttggc 300

ctcattcaat ccacatggca tcagcacttt catagacaac gatgac 346

<210> 56

<211> 299

<212> DNA

<213> Shigella Flexneri

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nnnnnnnnnn nggttcttaa tctttgctct cctgaccctt ttactctcat aaaaattatt 180

ngaggactcc aaatataata gcttttattt atgtatgtna taactttgga tactatatta 240

gaattaaaac tgagaaantt aaagggctta attaaaaaat aactctgtac atgttaaan 299

<210> 57

<211> 329

<212> DNA

<213> Shigella Flexneri

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tattttatgt cttatggttg ctgattctgt tgccatcnga ttactacgat aaanaagatc 180

tgngnctann gangggnctt ntttgaactg ntnctnnggc ntnggntngg gngcntntgt 240

ntngncnnng ttgttgngnn nanggcgngn ncggngncng ttgattnnca ggtntggnnn 300

ngntggnggc ncntggcncc tngcatntn 329

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<211> 832

<212> DNA

<213> Shigella Flexneri

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caacaaggag ttcaccgtga acatcatgga cacgtgtgag cgctgcaacg gcaaggggaa 120

cgagcccggc accaaggtgc agcattgcca ctactgtggc ggctccggca tggaaaccat 180

caacacaggc ccttttgtga tgcgttccac gtgtaggaga tgtggtggcc gcggctccat 240

catcatatcg ccctgtgtgg tctgcagggg agcaggacaa gccaagcaga aaaagcgagt 300

gatgatccct gtgcctgcag gagtcgagga tggccagacc gtgaggatgc ctgtgggaaa 360

aagggaaatt ttcattacgt tcagggtgca gaaaagccct gtgttccgga gggacggcgc 420

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agcccagggc ctgtacgaga cgatcaacgt gacgatcccc cctgggactc agacagacca 540

gaagattcgg atgggtggga aaggcatccc ccggattaac agctacggct acggagacca 600

ctacatccac atcaagatac gagttccaaa gaggctaacg agccggcagc agagcctgat 660

cctgagctac gccgaggacg agacagatgt ggaggggacg gtgaacggcg tcaccctcac 720

cagctctggt ggcagcacca tggatagctc cgcaggaagc aaggctaggc gtgaggctgg 780

ggaggacgag gagggattcc tttccaaact taagaaaatg tttacctcat ga 832

<210> 59

<211> 2358

<212> DNA

<213> Shigella Flexneri

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gagctggagg ctgtatacga acggctctgc ggcgaggaga aagtggtgga gagagagctg 180

gatgctcttt tggaacagca aaacaccatt gaaagtaaga tggtcactct ccaccgaatg 240

ggtcctaatc tgcagctgat tgagggagat gcaaagcagc tggctggaat gatcaccttt 300

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gagaagtttg ccattgccac caaggaaggt gatttgcccc aggtggagcg cttcttcaag 660

atcttcccac tgctgggttt gcatgaggag ggattaagaa ggttctcgga gtacctttgc 720

aagcaggtgg ccagtaaagc tgaggagaat ctgctcatgg tgctggggac agacatgagt 780

gatcggagag ctgcagtcat ctttgcagat acacttactc ttctgtttga agggattgcc 840

cgcattgtgg aggcccacca gccaatagtg gagacctatt atgggccagg gagactctat 900

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cgggtgaccg agatcctcga ttactgggga cccaattccg gcccattgac gtggcgcctc 2280

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cctgttcata aaactgcaaa ttatatcatt gaatgcaatt gattatggcc ctgtagacat 180

tcaagagttt tgccagtttg cacccatttg taaatgtgtt ttagcatctc ttatctgact 240

ataaatgtgc tgcttttgat ttatcttaca aaccatttgt cacn 284

<210> 61

<211> 283

<212> DNA

<213> Shigella Flexneri

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ccatgtantn gttgtacatg ttcatgnggg ctggnntnnc tnntnnttct atngntcatt 180

agatnnnnnn ncactcttgn actctcnctn tanttaccct catgccattg annaatctgt 240

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<210> 62

<211> 2170

<212> DNA

<213> Shigella Flexneri

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<212> DNA

<213> Shigella Flexneri

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aatctgccaa agcaacctcc acttgcccta gcaatgggac aggccacaca atgtctagga 1440

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<210> 64

<211> 1294

<212> DNA

<213> Shigella Flexneri

<400> 64

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tgatgacaaa ggtgcctaca gtgttggccc cctgcacagt gacctggagt acacggtgac 180

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agaagacacc gtgacagacg aagagggcaa gttcagatta cgtggattgc tgccgggatg 660

tgtgtaccac gttcagctca aggcagaagg caacgaccac attgagcggg cgctccccca 720

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gcagattaat caatttgatt taagtggaaa tgtgatcact tcctctgaat accttcctac 840

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tggccagtcc ctgttcttcc atttcccccc actgctcaga gacggcgaga actatgttgt 960

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<210> 65

<211> 3418

<212> DNA

<213> Shigella Flexneri

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cgatttgagc agcataaagg atgcagtcct gagctgtgct gtggcatatg acaaagaagg 180

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<211> 297

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tataccacac acatcctgtc acttgctttt ttgcttaaga gtatatctaa gagaatcctt 180

tgtgtcagtg aagctggagc tacctcattc ttttaactgg ctgcgtggcg ttccattgag 240

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<210> 68

<211> 2119

<212> DNA

<213> Shigella Flexneri

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<212> DNA

<213> Shigella Flexneri

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<211> 76

<212> DNA

<213> Shigella Flexneri

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ttttanccaa gaccactgtc ntcattttgc ctntgcccta nanatttntg gaactttnac 240

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gttaattttt ttctagtttt aaaattttca tccagttgtt ccagcntcnc ttgttgagaa 180

aattgttntt cccattaana ttactttgga tacctngngt gangnntata tgnggnctat 240

anngtgtngn gnaacncgac gctgcgcagn gtggcntanc gtcgtaagnn angtagngna 300

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agactcaatc ttgggctcca gttcccgact tttcgcctcc tctgggtctg tcctggggtc 180

agtaattaac ccgggtccca ggggtgtcgt cttttccctc cagggtgggg cgctgcctgt 240

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ngtttttttt nnttttnttt ttttngntaa nnnannngtt tttnaaaaag gtnnaaaaaa 180

atnttnacan ttttnggggn taanctttta atttaaaact tngncccctt aaattancca 240

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cagaacaggc tcgttctgga gaggggccca tgagtaaatt tgcccgtgga tcaaggtttt 240

ctgtggctga gcatcaagag cgttacaaag aggaatgtca gcgcatcttt gacctacaga 300

acaaggttct gtcatcaact gaagtcttat caactgacac agacagcagc tcagctgaag 360

atagtgactt tgaagaaatg ggaaagaaca ttgagaacat gttgcagaac aagaaaacca 420

gctctcagct ttcacgtgaa cgggaggaac aggagcggaa ggaactacag cgaatgctac 480

tggcagcagg ctcagcagca tccggaaaca atcacagaga tgatgacaca gcttccgtga 540

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aagaggggaa agagtatgtt cgctgtgaga cagtccgaaa accagctgtc attgatgcct 660

atgtgcgcat acggactaca aaagatgagg aattcattcg aaaatttgcc ctttttgatg 720

aacaacatcg ggaagagatg cgaaaagaac ggcggaggat tcaagagcaa ctgaggcggc 780

ttaagaggaa ccaggaaaag gagaagctta agggtcctcc tgagaagaag cccaagaaaa 840

tgaaggagcg tcctgaccta aaactgaaat gtggggcatg tggtgccatt ggacacatga 900

ggactaacaa attctgcccc ctctattatc aaacaaatgc gccaccttcc aaccctgttg 960

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agtttcaaaa ttactgagaa acaaatttac tacctagaat actgtgttaa tatacaattt 180

tctttagttt tacagtatcc agtcaaaagg ctgtcttcca aaattgctta ggtcagctcc 240

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<211> 287

<212> DNA

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ggaaatggag gcctgtagtt tgtaacccat aagaagagac tgaaggggcc taagtgcaga 180

tgagaatccc tggtgataga acagacaaga actggagatc aatgccaata gtttgtgatg 240

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<211> 595

<212> DNA

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caactgttct gataatgaat tcacccaagc tttaaccgca gctatccctc cagagtccct 180

gacccgtggg gtgtacagtg aagagaccct tagagcccgt ttctatgctg ttcaaaaact 240

ggcccgaagg gtagcaatga ttgatgaaac cagaaatagc ttgtaccagt acttcctctc 300

ctacctacag tccctgctcc tattcccacc tcagcaactg aagccgcccc cagagctctg 360

ccctgaggat ataaacacat ttaaattact gtcatatgct tcctattgca ttgagcatgg 420

tgatctggag ctagcagcaa agtttgtcaa tcagctgaag ggggaatcca gacgagtggc 480

acaggactgg ctgaaggaag cccgaatgac cctagaaacg aaacagatag tggaaatcct 540

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aatagctcct ctggtgcaag tgtggtagct attgacaaca aaatcgagca agctatggat 180

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atttcgaaaa gcagttacag acctttttggg ccgtcgacaa aggaaatctg agaaaagacg 180

agatccccca aatggtccta atctacccat ggctacagtt gatataaaaa atccagaaat 240

cacaacaaat agattttatg gtccacaagt caacaacatc tcccatacca aagaaaagaa 300

gaagggaaaa gctaaaaaga agagattaac caagggagat ataggaacac caagcaattt 360

ccagcacatt ggacatgttg gttgggatcc aaatacaggc tctgatctga ataatttgga 420

tccagaattg aagaatcttt ttgatatgtg tggaatctta gaggcacaac ttaaagaaag 480

agaaacatta aaagttatat atgactttat tgaaaaaaca ggaggtgttg aagctgttaa 540

aaatgaactg cggaggcaag caccaccacc tccaccacca tcaaggggag ggccacctcc 600

tcctcctccc cctccacata gctcgggtcc tcctcctcct cctgctaggg gaagaggcgc 660

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gtcctgctct ggacgagatg cactgttaga ccagatacga cagggtatcc aactaaaatc 1080

tgtggctgat ggccaagagt ctacaccacc aacacctgca cccacttcag gaattgtggg 1140

tgcattaatg gaagtgatgc agaaaaggag caaagccatt cattcttcag atgaagatga 1200

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<211> 290

<212> DNA

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gtaatcttat aataagtacc tatttttctc ttcttctagc gtatataaaa tgtattatct 240

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<210> 83

<211> 296

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gacctttgca gtgagtcaga gatttggcct aggcctgtgg gggatatccc tgggagaaac 180

tgtcttgtca aaggaagtta gcatttgaga cgatggcatg atctttgccc acttatccca 240

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<212> DNA

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<211> 479

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agacccatac ccacacaagt tccatgtaga catctcactc actgacttca tccaaaaata 180

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gaagggtgag ctgagcatca ttccgtatga gatcacactg ctgtctccct gtttgcatat 480

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gtcagancan nctgnggntg cactncnnnc gtcattgctt aacnnnacna gatgccncgt 180

catttcnagn cacncataca ataccacntg cntgngtgat ttnttttttn ganntgccaa 240

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ccccaacatc acccagctac agcccgacat cacccagcta ttccccctact agtcccaact 360

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gctattcccc gacctcacca agttactccc cttccagccc acgatacaca ccacagtctc 480

caacctatac cccaagctca cccagctaca gccccagttc gcccagctac agcccaacct 540

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ctaccagtcc cacctattca cccaccaccc caaaatactc cccaacatct cctacttatt 720

ccccaacctc tccagtctac accccaacct ctcccaagta ctcacctact agccccactt 780

actcgcccac ttcccccaag tactcgccca ccagccccac ctactcgccc acctcccccа 840

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<213> Shigella Flexneri

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ctgttcaaca ccctcttctt gaactggtgc tgtctgggct tcatagcatt cgcctactcc 180

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<212> DNA

<213> Shigella Flexneri

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tgtggttatt ctgttgtttt tggaagtcga aacccccaga agaccaccct actgcccagt 180

ggtgcagaag tcttgagcta ttcagaagca gccaagaagt ctgacatcat aatcatagca 240

atccacagag agcattatga ttttctcaca gaattaactg aggttctcaa tggaaaaata 300

ttggtagaca tcagcaacaa cctcaaaatc aatcaatatc cagaatctaa tgcagagtac 360

cttgctcatt tggtgccagg agcccacgtg gtaaaagcat ttaacaccat ctcagcctgg 420

gctctccagt caggagcact ggatgcaagt cggcaggtgt ttgtgtgtgg aaatgacagc 480

aaagccaagc aaagagtgat ggatattgtt cgtaatcttg gacttactcc aatggatcaa 540

ggatcactca tggcagccaa agaaattgaa aagtaccccc tgcagctatt tccaatgtgg 600

aggttcccct tctatttgtc tgctgtgctg tgtgtcttct tgtttttcta ttgtgttata 660

agagacgtaa tctaccctta tgtttatgaa aagaaagata atacatttcg tatggctatt 720

tccattccaa atcgtatctt tccaataaca gcaccttaca ctgcttgctt tggtttacct 780

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<211> 318

<212> DNA

<213> Shigella Flexneri

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gcagaaagtg aagaacaatg acctccggga gaagaactgg aaggccatgg aggcactggc 180

cacggccgag caggcctgca aggagaagct gcactccctg acccaggcca aggaggaatc 240

ggagaagcag ctctgtctga ttgaggcgca gaccatggag gccctgctgg ctctgctccc 300

agaactctct gtcttggc 318

<210> 114

<211> 197

<212> DNA

<213> Shigella Flexneri

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<211> 320

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<212> DNA

<213> Shigella Flexneri

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tgccaatatc gccatcagca atgagctgtt tgaagaagca tttgccattt tccggaaatt 240

tgatgtcaat acttcagcag ttcaggtctt aattgagcat attggaaact tggatcgggc 300

atatgagttt gctgaacgtt gcaatgaacc tgcggtctgg agtcaacttg caaaagccca 360

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ctcctacatg gaagttgttc aggctgccaa tactagtgga aactgggaag aactggtgaa 480

gtacttgcag atggcccgta agaaggctcg agagtcctat gtggagacag aactgatatt 540

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<213> Shigella Flexneri

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<210> 120

<211> 1316

<212> DNA

<213> Shigella Flexneri

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gattcaggat caggcccggg aactgtctta cctacggcaa aaaatacgag aagggagagg 180

tatttgttat cttatcaccc ggcatgcaaa agatacagta aaatcttttg aggatctcct 240

aaggagcaat gacattgact actacctggg acagagcttc cgggagcaac tcgcccaggg 300

aagccagctg acagagaggc tcaccagcaa actcagcacc aaggatcata aaagtgagaa 360

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gaaagtgatt gaagtcctgc aggccaagct ggatgctcgg tccctcacac cctccagcag 480

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<211> 496

<212> DNA

<213> Shigella Flexneri

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gcaaaagtgt ccgaagaaga aacaaagaag gaagaaaagg aagagaaatc tcaagaccct 180

caagaagaca aaaaggagga aaagaaaact aagaccatag aggaagtata catgtcgtcc 240

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aaattaacta ctgcaatgtg caatgaagtg gcctctttat caaagaagtt tacgaattct 420

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ttgttagagg gctgca 496

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<211> 607

<212> DNA

<213> Shigella Flexneri

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tgatgcaaac acaactcagt tcaagaggct gaaagagatg aacgagaggg agaagaagga 180

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gaggcgtcag tggctgcagg aggccatgtc ggctgccttc cgaggccagc gggaggaggt 180

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<211> 443

<212> DNA

<213> Shigella Flexneri

<400> 124

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gagctgctgg aggctggcta cttgcctgtg gtcatcgata acttccataa tgccttccgt 120

ggaggggggct ccctgcctga gagcctgcgg cgggtccagg agctgacagg ccgctctgtg 180

gagtttgagg agatggacat tttggaccag ggagccctac agcgtctctt caaaaagtac 240

agctttatgg cggtcatcca ctttgcgggg ctcaaggccg tgggcgagtc ggtgcagaag 300

cctctggatt attacagagt taacctgacc gggaccatcc agcttctgga gatcatgaag 360

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tacctgcccc ttgatgaggc cca 443

<210> 125

<211> 845

<212> DNA

<213> Shigella Flexneri

<400> 125

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caagcagttc catgaagctt ggagtaaact tatggagtgg ctagaagagt cagaaaagtc 120

tttggattct gaactggaaa tcgcaaatga tccagacaaa ataaaaacac aacttgcaca 180

acataaggag tttcagaaat cactcggagc caagcattct gtctacgaca ccaccaacag 240

gactggacgt tctctgaagg agaaaacctc cctggctgat gacaacctga aactggatga 300

catgctgagt gaactcagag acaaatggga taccatatgt ggaaaatctg tggaaagaca 360

aaacaaattg gaggaagccc tgttattttc tggacaattc acagatgccc tacaggctct 420

cattgattgg ttatatagag ttgaacccca gctggcagaa gaccagcctg ttcatggaga 480

cattgatttg gtgatgaatc tgatcgataa tcacaaggcc ttccaaaaag agttggggaa 540

gaggaccagc agtgtgcagg ccctgaagcg ctcagcccga gaactcatag aaggcagtcg 600

ggatgactcc tcctgggtca aggtccagat gcaggaatta agcacacgct gggagaccgt 660

gtgtgcactt tctatatcaa agcaaacacg gttagaagca gccctgcgtc aggcagagga 720

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agaat 845

<210> 126

<211> 1721

<212> DNA

<213> Shigella Flexneri

<400> 126

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cacagtggaa acagtcaaca aagctggcaa tgagcttctt gaatccagtg ctggagatga 180

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ggtaaaagga cagctccagg aactgagcac tcgctgggac actgtctgta aactctctgt 1560

ttccaaacaa agccggcttg agcaggcctt aaaacaagcg gaagtgtttc gagacacagt 1620

ccacatgctg ttggagtggc tttctgaagc agagcaaacg cttcgctttc ggggagcact 1680

tcctgatgac acagaggccc tgcagtctct cattgacacc c 1721

<210> 127

<211> 775

<212> DNA

<213> Shigella Flexneri

<400> 127

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agacatttgg tttgaggaga agctccagga ggtagagtgt gaggagcagc gcttacggaa 180

actgcatgct gttgtagaaa ctctagtcaa ccataggaaa gagctagcgc tgaacacagc 240

ccagtttgca aagagtctag ccatgcttgg gagctctgag gacaacacgg cattgtcacg 300

ggcactctcc cagctggctg aggtggaaga aaaaattgag cagctccacc aggaacaggc 360

caacaatgac ttcttcctcc ttgctgagct cctgagtgac tacattcgcc tcctggccat 420

agtccgcgct gccttcgacc agcgcatgaa gacatggcag cgctggcagg atgcccaagc 480

cacactgcag aagaagcggg aggccgaggc tcggctgctg tgggccaaca agcctgataa 540

gctgcagcag gccaaggacg agatcctcga gtgggagtct cgggtgactc aatatgaaag 600

ggacttcgag aggatttcaa cagtggtccg aaaagaagtg atacggtttg agaaagagaa 660

atccaaggac ttcaagaacc acgtgatcaa gtaccttgag acactccttt actcacagca 720

gcagctggca aagtactggg aagccttcct tcctgaggca aaggccatct cctaa 775

<210> 128

<211> 1617

<212> DNA

<213> Shigella Flexneri

<400> 128

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agaagtgctt ttagaagctg ctattgatct tagtaaaaag ggccttgatg ttaaaagtga 180

agcatgtcag cgatttttcc gtgatgggct aacaatatca ttcactaaaa ttcttacaga 240

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ggttccacag tttttagaaa acttaactga tgaagaactg aaaaaagaag caaagaatga 720

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<210> 129

<211> 4525

<212> DNA

<213> Shigella Flexneri

<400> 129

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ttcagcctca caagtgctat atctaacaga ggtagtctat gccttgttaa tgcctgctgg 120

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catgacacag atcaaccaag ttacccatga tcaagcagtg gtgctacaaa gtgcccttca 420

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gcagatatct gatgaggctt caagatatat gcctgatatt tgtgtaatta gagctataca 540

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caaccctcag agaactggcc aacgagcaca agaaaattat gaaggcagtg aagaagtatc 4500

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<210> 130

<211> 594

<212> DNA

<213> Shigella Flexneri

<400> 130
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<210> 131

<211> 620

<212> DNA

<213> Shigella Flexneri

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tacccaagtt tacttgaaag 620

<210> 132

<211> 370

<212> DNA

<213> Shigella Flexneri

<400> 132
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ccggaagata ctggtgtctc tcatcgaggt ggcgcagaag ctgttagcgc tgaacccaga 180

tgcggtggaa ttgtttaaga aggcgaatgc aatgctggac gaggacgagg atgagcgtgt 240

ggacgaggct gccctgcggc agctcacgga gatgggcttt ccggagaaca gagccaccaa 300

ggcccttcag ctgaaccaca tgtcggtgcc tcaggccatg gagtggctaa ttgaacacgc 360

agaagacccg 370

<210> 133

<211> 345

<212> DNA

<213> Shigella Flexneri

<400> 133
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gctctggaca aggccaagga gaaggacaag aagatcacag aactctccaa agaagtcttc 180

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ctccgtgacc aggtgaagga tttacagcag cagctgcagg aagctgccag ggaccactcc 300

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<210> 134

<211> 795

<212> DNA

<213> Shigella Flexneri

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ggatcattca gctcagcaaa caaatacagc tggaagcaat gttactacat catcaactcc 180

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<210> 135

<211> 1096

<212> DNA

<213> Shigella Flexneri

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<211> 412

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<213> Shigella Flexneri

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<211> 277

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gaaagtgcaa aggctagagt tacaaatacg aagacgtcta aaccaatcgt acatgccaga 180

aaaaaatacc gctttcacaa aactcgctcc cacgtgaccc acagaacacc caaagtcaaa 240

aagagtccaa aggtcagaaa gaaaagttat ctgagta 277

<210> 138

<211> 726

<212> DNA

<213> Shigella Flexneri

<400> 138

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<211> 629

<212> DNA

<213> Shigella Flexneri

<400> 139

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<211> 758

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<211> 433

<212> DNA

<213> Shigella Flexneri

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<211> 365

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<213> Shigella Flexneri

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<210> 143

<211> 4612

<212> DNA

<213> Shigella Flexneri

<400> 143

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<210> 144

<211> 1539

<212> DNA

<213> Shigella Flexneri

<400> 144

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<211> 476

<212> DNA

<213> Shigella Flexneri

<400> 145

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<210> 146

<211> 393

<212> DNA

<213> Shigella Flexneri

<400> 146

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agaacagaaa gaaataatga agcattggat gatttaaaat cccagaggaa aaaaatactt 360

gaagaagtca tggaaaaaga aacttacaag acg 393

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<211> 1257

<212> DNA

<213> Shigella Flexneri

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gtcctggtgg atcctgagta tctcaaagag cggagagtct atgtgacgct gacctgcgcc 180

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<210> 148

<211> 1389

<212> DNA

<213> Shigella Flexneri

<400> 148

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cagacccacc gaagattaag aaggtctcat tcgggaccag ctggctcctt taacaagcca 780

gccataagga tatccaactg ttgtatacac agagcttctc ctaactccga tgaagacaaa 840

cctgaggttc cccccagagt tcccatacct cctagaccag taaagccaga ttatagaaga 900

tggtcagcag aagttacttc gagcacctat agtgatgaag acaggcctcc caaagtaccg 960

ccaagagaac ctttgtcacc gagtaactcg cgcacaccga gtcccaaaag ccttccgtct 1020

tacctcaatg gggtcatgcc cccgacacag agctttgccc ctgatcccaa gtatgtcagc 1080

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cccattattg aaaatgggaa gaaggttagt tcaacacatt attacctact acctgaacga 1200

ccaccatacc tggacaaata tgaaaaattt tttagggaag cagaagaaac aaatggaggc 1260

gcccaaatcc agccattacc tgctgactgc ggtatatctt cagccacaga aaagccagac 1320

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<210> 149

<211> 494

<212> DNA

<213> Shigella Flexneri

<400> 149
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ctggtgccgt ccaaaccgtt ccgttatcca ggctttttga ccacgctatg ctccaagccc 120

atcgcgcgca ccagctggcc attgacacct accaggagtt tgaagaaacc tatatcccaa 180

aggaccagaa gtattcattc ctgcatgact cccagacctc cttctgcttc tcagactcta 240

ttccgacacc ctccaacatg gaggaaacgc aacagaaatc caatctagag ctgctccgca 300

tctccctgct gctcatcgag tcgtggctgg agcccgtgcg gttcctcagg agtatgttcg 360

ccaacaacct ggtgtatgac acctcggaca gcgatgacta tcacctccta aaggacctag 420

aggaaggcat ccaaacgctg atgggggtga gggtggcgcc aggggtcgcc aatcctggaa 480

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<210> 150

<211> 650

<212> DNA

<213> Shigella Flexneri

<400> 150
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ccttcgtgca gagatcacag atgctgaagg cctgggtttg aagctcgaag atcgagagac 120

agttattaag gagttgaaga agtcactcaa gattaaggga gaggagctaa gtgaggccaa 180

tgtgcggctg agcctcctgg agaagaagtt ggacagtgct gccaaggatg cagatgagcg 240

catcgagaaa gtccagactc ggctggagga gacccaggca ctgctgcgaa agaaggagaa 300

agagtttgag gagacaatgg atgcactcca ggctgacatc gaccagctgg aggcagagaa 360

ggcagaacta aagcagcgtc tgaacagcca gtccaaacgc acgattgagg gactccgggg 420

ccctcctcct tcaggcattg ctactctggt ctctggcatt gctggtgaag aacagcagcg 480

aggagccatc cctgggcagg ctccagggtc tgtgccaggc ccagggctgg tgaaggactc 540

accactgctg cttcagcaga tctctgccat gaggctgcac atctcccagc tccagcatga 600

gaacagcatc ctcaagggag cccagatgaa ggcatccttg gcatccctgc 650

<210> 151

<211> 933

<212> DNA

<213> Shigella Flexneri

<400> 151

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gctattctga catgtccact ggaagttgta aaaacacgac tgcagtcatc ttctgtgacg 120

ctttatattt ctgaagttca gctgaacacc atggctggag ccagtgtcaa ccgagtagtg 180

tctcccggac ctcttcattg cctaaaggtg atcttggaaa aagaagggcc tcgttccttg 240

tttagaggac taggccccaa tttagtgggg gtagcccctt ccagagcaat atactttgct 300

gcttattcaa actgcaagga aaagttgaat gatgtatttg atcctgattc tacccaagta 360

catatgattt cagctgcaat ggcaggtttt actgcaatca cagcaaccaa ccccatttgg 420

cttataaaga ctcggttaca gcttgatgca aggaaccgcg gggaaaggcg aatgggtgct 480

tttgaatgtg ttcgtaaagt gtatcagaca gatggactaa aaggatttta taggggcatg 540

tctgcttcat atgctggtat atcagagact gttatccatt ttgttattta tgaaagtata 600

aaacaaaaac tactggaata taagactgct tctacaatgg aaaatggtga agagtctgtg 660

aaagaagcat cagattttgt gggaatgatg ctagctgctg ccacctcaaa aacttgtgcc 720

acaactatag catatccaca tgttgtaaga acaagactac gtgaagaggg aacaaaatac 780

agatcttttt ttcagactct atctttgctt gttcaagaag aaggttatgg gtctctttat 840

cgtggtctga caactcatct agtgagacag attccaaaca cagccattat gatggccacc 900

tatgaattgg tggtttacct actcaatgga tag 933

<210> 152

<211> 666

<212> DNA

<213> Shigella Flexneri

<400> 152

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gtgggctttg ctctgccaaa tccacaggaa aatctacctg atttttataa tgactggatg 120

ttcattgcta aacatctgcc tgatctcata gagtctggcc agcttcgaga aagagttgag 180

aagttaaaca tgctcagcat tgatcatctc acagaccaca agtcacagcg ccttgcacgt 240

ctagttctgg gatgcatcac catggcatat gtgtggggca aaggtcatgg agatgtccgt 300

aaggtcttgc caagaaatat tgctgttcct tactgccaac tctccaagaa actggaactg 360

cctcctattt tggtttatgc agactgtgtc ttggcaaact ggaagaaaaa ggatcctaat 420

aagcccctga cttatgagaa catggacgtt ttgttctcat ttcgtgatgg agactgcagt 480

aaaggattct tcctggtctc tctattggtg gaaatagcag ctgcttctgc aatcaaagta 540

attcctactg tattcaaggc aatgcaaatg caagaacggg acactttgct aaaggcgctg 600

ttggaaatag cttcttgctt ggagaaagcc cttcaagtgt ttcaccaaat ccacgatcat 660

gtgaac 666

<210> 153

<211> 280

<212> DNA

<213> Shigella Flexneri

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<222> (6)..(6)

<223> misc_feature

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<223> misc_feature

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tctcttaact gtctgacatg gnaacatngt ctataccnag ttngngtgca cttttaaaat 120

gaatccgatt tgtctgcact nnnntnccnc ntctncctcn ttntatgtgn gtgcagcgtt 180

tacnctactn cantctgant gtacttantg gtnatcttnc ntgcnnttgn ggntggngan 240

ggtgntcgcn tttttnttct gtgtaccngn nngggggggn 280

<210> 154

<211> 475

<212> DNA

<213> Shigella Flexneri

<400> 154
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tccagtggac cagccctctc ggtttgggaa taaggcatac aggacctggt atgccaaact 120

tgatgaggaa gcagaaaact tggtggccac agtggtccct acccatctgg cagctgctgt 180

gcctgaggtg gctgtttacc taaaggagtc agtggggaac tccacgcgca ttgactacgg 240

cacagggcat gaggcagcct tcgctgcttt cctctgctgt ctctgcaaga ttggggtgct 300

ccgggtggat gaccaaatag ctattgtctt caaggtgttc aatcggtacc ttgaggttat 360

gcggaaactc cagaaaacat acaggatgga gccagccggc agccagggag tgtggggtct 420

ggatgacttc cagtttctgc ccttcatctg gggcagttcg cagctgatag accac 475

<210> 155

<211> 276

<212> DNA

<213> Shigella Flexneri

<220>

<221> misc_feature

<222> (87)..(87)

<223> misc_feature

<400> 155

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taattcccag gctaaatttc gagccctagg aaacctgggc gatatattca tctgtaaaaa 180

agatataaat ggtgcaataa aattctatga gcagcaactg ggcttagctc accaggtaaa 240

ggacagaaga ttagaagcca gtgcatatgc agccct 276

<210> 156

<211> 985

<212> DNA

<213> Shigella Flexneri

<400> 156
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ttgggacaga gaaatcaaga ggacaggtgc ttccgggtgg agagtttgtt ctattaacga 120

gggttacatg atatccactt gccttccaga atacattgta gtgccaagtt ctttagcaga 180

ccaagatcta aagatctttt cccattcttt tgttgggaga aggatgccac tctggtgctg 240

gagccactct aacggcagtg ctcttgtgcg aatggccctc atcaaagacg tgctgcagca 300

gaggaagatt gaccagagga tttgtaatgc aataactaaa agtcacccac agagaagtga 360

tgtttacaaa tcagatttgg ataagacctt gcctaatatt caagaagtac aagcagcatt 420

tgtaaaactg aagcagctat gcgttaatga gcctttgaa gaaactgaag agaaatggtt 480

atcttcactg gaaaatactc gatggttaga atatgtaagg gcattcctta agcattcagc 540

agaacttgta tacatgctag aaagcaaaca tctctctgta gtcctacaag aggaggaagg 600

aagagacttg agctgttgtg tagcttctct tgttcaagtg atgctggatc cctattttag 660

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ctacctggca gtgttgtatg acagcacccg gatctcactg tttggcacct tcctgttcaa 900

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agattatttt ccttcacgag tttga 985

<210> 157

<211> 493

<212> DNA

<213> Shigella Flexneri

<400> 157
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gccagaccct tgcagtagtg aactggatgc catgatgctg gggccccgtg ggaagaccta 120

tgctttcaag ggggactatg tgtggactgt atcagattca ggaccgggcc ccttgttccg 180

agtgtctgcc ctttgggagg ggctccccgg aaacctggat gctgctgtct actcgcctcg 240

aacacaatgg attcacttct ttaagggaga caaggtgtgg cgctacatta atttcaagat 300

gtctcctggc ttccccaaga agctgaatag ggtagaacct aacctggatg cagctctcta 360

ttggcctctc aaccaaaagg tgttcctctt taagggctcc gggtactggc agtgggacga 420

gctagcccga actgacttca gcagctaccc caaaccaatc aagggtttgt ttacgggagt 480

gccaaaccag ccc 493

<210> 158

<211> 748

<212> DNA

<213> Shigella Flexneri

<400> 158

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tgccgacatc ccagagctgg gcagtgtgca cttcgacgaa gacgagttct ggactgaggg 180

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ccactttaag ctgcacccag atgatgtggc agggatccag gctctctatg gcaagaagag 360

tccagtgata agggatgagg aagaagaaga gacagagctg cccactgtgc ccccagtgcc 420

cacagaaccc agtcccatgc cagacccttg cagtagtgaa ctggatgcca tgatgctggg 480

tgaggcccct cccctccagg ctgttggcag gcggtggggg cagcctgctg atcctgaggc 540

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cctatgcttt caaggggggac tatgtgtgga ctgtatcaga ttcaggaccg ggccccttgt 660

tccgagtgtc tgcccttggg gaggggctcc ccggaaacct ggatgctgct gtctactcgc 720

ctcgaacaca atggattcac ttctttaa 748

<210> 159

<211> 876

<212> DNA

<213> Shigella Flexneri

<400> 159
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aatcggttag acttctcaag tgcaattcaa gatatccgaa cgttcaatta tgtggtcaaa 180

ctgttgcagc taattgcaaa atcccagtta acttcattga gtggcgtggc acagaagaat 240

tacttcaaca ttttggataa aatcgttcaa aaggttcttg atgaccacca caatcctcgc 300

ttaatcaaag atcttctgca agacctaagc tctaccctct gcattcttat tagaggagta 360

gggaagtctg tattagtggg aaacatcaat atttggattt gccgattaga aactattctc 420

gcctggcaac aacagctaca ggatcttcag atgactaagc aagtgaacaa tggcctcacc 480

ctcagtgacc ttcctctgca catgctgaac aacatcctat accggttctc agacggatgg 540

gacatcatca ccttaggcca ggtgaccccc acgttgtata tgcttagtga agacagacag 600

ctgtggaaga agctttgtca gtaccatttt gctgaaaagc agttttgtag acatttgatc 660

ctttcagaaa aaggtcatat tgaatggaag ttgatgtact ttgcacttca gaaacattac 720

ccagcgaagg agcagtacgg agacacactg catttctgtc ggcactgcag cattctcttt 780

tggaaggact caggacaccc ctgcacggcg gccgaccctg acagctgctt cacgcctgtg 840

tctccgcagc acttcatcga cctcttcaag ttttaa 876

<210> 160

<211> 400

<212> DNA

<213> Shigella Flexneri

<400> 160
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tctcctccat ggtccagacc tccccagcat ttacccttca ttcacctatt accgttcagg 180

agaaaacctc tacttgtcct gcttcgccga gtctaaccca cgggcacaat attcttggac 240

aattaatggg aagtttcagc tatcaggaca aaagctctct atcccccaaa taactacaaa 300

gcatagtggg ctctatgctt gctctgttcg taactcagcc actggcaagg aaagctccaa 360

atccatcaca gtcaaagtct ctgactggat attaccctga 400

<210> 161

<211> 259

<212> DNA

<213> Shigella Flexneri

<400> 161
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aacttatcat ataacaaaat cagcaaaatt gaaggcatag aaaatatgtg taatctgcaa 180

aagcttaacc ttgcaggaaa tgaaattgag catattccag tatggttagg gaagaagtta 240

aaatctttgc gagtcctca 259

<210> 162

<211> 269

<212> DNA

<213> Shigella Flexneri

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tgcaggaaaa ggggttgtga gtgccaggaa ggccagtttc gaacaacgtg gcaagggaag 180

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tctgggggtg cagtgttcca ngtgggggga 269

<210> 163

<211> 641

<212> DNA

<213> Shigella Flexneri

<400> 163
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caagccccgt gcccggcccc ctgaagaagg tgaagatacc cgtcctcctc gcctcaagaa 120

atggaaagga gtgcgctgga agcggcttcg gctgctgctg accatccaga agggcagtgg 180

acggcaggag gatgagcggg aagtggcaga gtttatggag cagcttggca cagccttgcg 240

acctgacaag gtaccgcgag acatgcgtcg ctgctgtttc tgtcatgagg agggtgacgg 300

ggccactgat gggcctgccc gtctgctgaa cctggacctg gacctgtggg tgcacctcaa 360

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ggttgccctg caccgaggac tgctaaccaa gtgctccctg tgccagcgaa ctggtgccac 480

cagcagctgc aatcgcatgc gttgccccaa tgtctaccat tttggttgtg ccatccgcgc 540

caagtgcatg ttcttcaagg acaagaccat gctgtgtcca atgcataaga tcaaggggcc 600

ctgtgagcaa gagctgagct cttttgctgt cttccggcgg g 641

<210> 164

<211> 669

<212> DNA

<213> Shigella Flexneri

<400> 164
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tggtcggaaa gagattgaca taaaaaaata tgcaagagtg gaaaagatac ctggaggcat 180

cattgaagac tcctgtgtct tgcgtggagt catgattaac aaggatgtga cccatccacg 240

tatgcggcgc tatatcaaga accctcgcat tgtgctgctg gattcttctc tggaatacaa 300

gaaaggagga agccagactg acattgagat tacacgagag gaggacttca cccgaattct 360

ccagatggag gaagagtaca tccagcagct ctgtgaggac attatccaac tgaagcccga 420

tgtggtcatc actgaaaagg gcatctcaga tttagctcag cactacctta tgcgggccaa 480

tatcacagcc atccgcagag tccggaagac agacaataat cgcattgcta gagcctgtgg 540

ggcccggata gtcagccgac cagaggaact gagagaagat gatgttggaa caggagcagg 600

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ccccaaggc 669

<210> 165

<211> 866

<212> DNA

<213> Shigella Flexneri

<400> 165

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acaatccagg gtctgagggc gaatctcacc agtgccatag aaaccctgtg tggtgtggac 180

tcctctgtgg cagtgtcctc tggcggggag ctcttcctcc gcttcatcag tcttgcctcc 240

ctggaatact ccgattactc caaatgtaaa aagatcatga ttgagcgggg agaacttttt 300

ctcaggagaa tatcactgtc aagaaacaaa attgcagatc tgtgccatac tttcatcaaa 360

gatggagcga caatattgac tcacgcctac tccagagtgg tcctgagagt cctggaagca 420

gccgtggcgg ccaagaagcg atttagtgta tacgtcacag agtcacagcc tgatttgtca 480

ggtaagaaaa tggccaaagc cctctgccac ctcaacgtcc ctgtcactgt ggtgctagat 540

gctgctgtcg gctacatcat ggagaaagca gatcttgtca tagttggtgc tgaaggagtt 600

gttgaaaacg gaggaattat taacaagatt ggaaccaacc agatggctgt gtgtgccaaa 660

gcacagaaca aacctttcta tgtggttgca gaaagtttca agtttgtccg gctctttcca 720

ctaaaccagc aagacgtccc agataagttt aagtataagg cagacactct caaggtcgcg 780

cagactggac aagacctcaa agaggagcat ccgtgggtcg actacactgc cccttcctta 840

atcactctgc tgtttacaga cctggg 866

<210> 166

<211> 581

<212> DNA

<213> Shigella Flexneri

<400> 166
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accctcacct gcaggctctt gggccctgtg gacaaagggc acgatgtgac cttctacaag 120

acgtggtacc gcagctcgag gggcgaggtg cagacctgct cagagcgccg gcccatccgc 180

aacctcacgt tccaggacct tcacctgcac catggaggcc accaggctgc caacaccagc 240

cacgacctgg ctcagcgcca cgggctggag tcggcctccg accaccatgg caacttctcc 300

atcaccatgc gcaacctgac cctgctggat agcggcctct actgctgcct ggtggtggag 360

atcaggcacc accactcgga gcacagggtc catggtgcca tggagctgca ggtgcagaca 420

ggcaaagatg caccatccaa ctgtgtggtg tacccatcct cctcccagga tagtgaaaac 480

atcacggctg cagccctggc tacgggtgcc tgcatcgtag gaatcctctg cctccccctc 540

atcctgctcc tggtctacaa gcaaaggcag gcagcctcca a 581

<210> 167

<211> 569

<212> DNA

<213> Shigella Flexneri

<400> 167
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aggaactcca aagacattgt caaccgattc tattcagtac caccttcaga tggaggataa 180

gaatggacgg tttgtatccc tatacagagg accatgtcat acatacaaag tacaaagact 240

taatgagtca acatcctata aattctgtat tcaagcttgt aatgaagctg gggaaggtcc 300

cctctcccaa gaatatattt tcactactcc aaaatctgtc ccagctgcct tgaaagcccc 360

caaaatagag aaagtaaatg atcacatttg tgaaattaca tgggagtgtt tacagccaat 420

gaaaggtgat ccagttattt acagtcttca agttatgttg ggaaaagatt cagaattcaa 480

acagatttac aagggtcccg actcttcctt ccggtattcc agccttcagc tgaactgtga 540

atatcgcttc cgtgtatgtg ccattcgcc 569

<210> 168

<211> 1327

<212> DNA

<213> Shigella Flexneri

<400> 168

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tctcagtgag aagcgcacgc tggagggcga gctgcatgat ctgcggggcc aggtggccaa 120

gcttgaggca gccctaggtg aggccaagaa gcaacttcag gatgagatgc tgcggcgggt 180

ggatgctgag aacaggctgc agaccatgaa ggaggaactg gacttccaga agaacatcta 240

cagtgaggag ctgcgtgaga ccaagcgccg tcatgagacc cgactggtgg agattgacaa 300

tgggaagcag cgtgagtttg agagccggct ggcggatgcg ctgcaggaac tgcgggccca 360

gcatgaggac caggtggagc agtataagaa ggagctggag aagacttatt ctgccaagct 420

ggacaatgcc aggcagtctg ctgagaggaa cagcaacctg gtgggggctg cccacgagga 480

gctgcagcag tcgcgcatcc gcatcgacag cctctctgcc cagctcagcc agctccagaa 540

gcagctggca gccaaggagg cgaagcttcg agacctggag gactcactgg cccgtgagcg 600

ggacaccagc cggcggctgc tggcggaaaa ggagcgggag atggccgaga tgcgggcaag 660

gatgcagcag cagctggacg agtaccagga gcttctggac atcaagctgg ccctggacat 720

ggagatccac gcctaccgca agctcttgga gggcgaggag gagaggctac gcctgtcccc 780

cagccctacc tcgcagcgca gccgtggccg tgcttcctct cactcatccc agacacaggg 840

tgggggcagc gtcaccaaaa agcgcaaact ggagtccact gagagccgca gcagcttctc 900

acagcacgca cgcactagcg ggcgcgtggc cgtggaggag gtggatgagg agggcaagtt 960

tgtccggctg cgcaacaagt ccaatgagga ccagtccatg ggcaattggc agatcaagcg 1020

ccagaatgga gatgatccct tgctgactta ccggttccca ccaaagttca ccctgaaggc 1080

tgggcaggtg gtgacgatct gggctgcagg agctggggcc acccacagcc cccctaccga 1140

cctggtgtgg aaggcacaga acacctgggg ctgcgggaac agcctgcgta cggctctcat 1200

caactccact ggggaagaag tggccatgcg caagctggtg cgctcagtga ctgtggttga 1260

ggacgacgag gatgaggatg gagatgacct gctccatcac caccatgtga gtggtagccg 1320

ccgctga 1327

<210> 169

<211> 1438

<212> DNA

<213> Shigella Flexneri

<400> 169

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accaagtacc aatgagcttc ccctatttga ctttcctgtc aaagaggttt ttgaactgct 120

cggggtggag aatgtgtttc agctttttac ttgtgccctt ctggagtttc aaatcctgct 180

ctactcacag cattaccaga gactgatgac tgtggcggag acgattacag ctctcatgtt 240

tcctttccag tggcagcatg tctatgtccc tattctccca gcttctctcc tgcatttctt 300

agatgctcct gttccatacc tgatgggttt gcattccaat ggcctggatg accggtcaaa 360

gctggagctg cctcaagagg ctaacctctg ctttgtggac attgacaacc acttcattga 420

gttgccagag gacttgccac agttccccaa caaattggag tttgtccagg aagtctctga 480

gattctcatg gcatttggaa ttccccctga agggaatctt cattgcagtg agagtgcctc 540

caagctgaag aggctgcggg cctctgagct tgtctcggac aagaggaatg ggaacattgc 600

tggctcccct ttgcattcct acgagcttct taaggagaat gaaactattg cccggctgca 660

agccttggtc aagagaactg gggtgagcct ggaaaagttg gaagtgcgtg aagaccccag 720

cagcaataag gatctcaaag ttcagtgtga tgaagaagaa ctcaggattt accagctaaa 780

cattcagatc cgggaagttt ttgcaaatcg tttcactcag atgtttgcag attatgaggt 840

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aaactttgat aaagcatctt ttctgtcaga tcagcctgag ccctacctgc ccttcctctc 960

aagattcctg gagacccaga tgtttgcatc tttcattgac aacaaaataa tgtgtcatga 1020

tgatgatgat aaagaccctg tactccgggt atttgattcc cgagttgaca agatcaggct 1080

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acatttactt gacatgaaga ttggacaagg gaaatatgag ccgggcttct tccctaagct 1260

gcagtctgat gtactttcca ctgggccagc cagcaacaag tggacgaaaa ggaatgcccc 1320

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tgaccagagg gagaagtaca tccaggaagc caggactatg ggcagcacta tccgccag 1438

<210> 170

<211> 274

<212> DNA

<213> Shigella Flexneri

<220>

<221> misc_feature

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<223> misc_feature

<220>

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<222> (203)..(203)

<223> misc_feature

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<223> misc_feature

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<222> (268)..(269)

<223> misc_feature

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ttatttgata caagtgccat ttcaaatcag caagggaatt gggccaattt gttatccatt 180

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gatnggncat gtgggtgtna ngcggtgnng gcgg 274

<210> 171

<211> 895

<212> DNA

<213> Shigella Flexneri

<400> 171
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catccacatg agcctgcttg agatgaggcg gagcgtggcg gaactcaggc tccagctcca 120

gcagatgcgg cagctccagc tgcagaacca ggagttgctg agggcaatga tgaagaaggc 180

cgagctggaa atcagtggca aagtgatgga aacaatgaag agactggagg atcccgtgca 240

gcgacagcgc gtcctagtgg agcaagagag acaaaaatat cttcatgagg aagagaagat 300

cgtcaagaag ttgtgcgagt tggaagactt tgttgaagac ttgaagaagg actccacggc 360

agccagccga ttggttactc tgaaagacgt ggaagacggg gctttcctcc tgcgtcaagt 420

gggagaggct gtagctaccc tgaaaggaga atttccaacc ttacaaaaca agatgcgagc 480

catcctgcgc atagaagtgg aggccgtgcg gtttctgaag gaggagccac acaagctgga 540

cagtctcctg aagcgtgtgc gcagcatgac agacgtcctg accatgctgc ggagacatgt 600

cactgatggg ctcctgaaag gcacggacgc agcccaagcc gcacagtaca tggctatgga 660

aaaggccaca gccgcagaag tcctgaagag tcaggaggag gcagcccaca cctccggcca 720

gcccttccac agcacaggtg cccctggcga tgcgaagtcg gaagtggtgc ctttgtccgg 780

catgatggtt cgccacgcgc agagctcccc tgtggtcatc cagccctccc agcactccgt 840

ggccctgctg aaccctgctc agaacttgcc tcacgtggcc agctccccag ccgtc 895

<210> 172

<211> 268

<212> DNA

<213> Shigella Flexneri

<400> 172
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ggatgtgctg ctcgagtacc tggcctttgc ccagtgctct gtcacgtatg acatggagag 120

cacagacaac ggggcttcca actcagagaa aaacaagccc ctggagcagt ctgtggaaga 180

cctcagcaag ggtccaccct cctccgtgcc caaaagccgc cacctgacca tcaagctgac 240

cccagcccac agcaggaagg ccctgcgg 268

<210> 173

<211> 642

<212> DNA

<213> Shigella Flexneri

<400> 173
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ggtgatgcat gccagatcgg gaggcaattt ggaagtgatg ggtctgatgc taggaaaggt 120

ggatggtgaa accatgatca ttatggacag ttttgctttg cctgtggagg gcactgaaac 180

ccgagtaaat gctcaggctg ctgcatatga atacatggct gcatacatag aaaatgcaaa 240

acaggttggc cgccttgaaa atgcaatcgg gtggtatcat agccaccctg gctatggctg 300

ctggctttct gggattgatg ttagtactca gatgctcaat cagcagttcc aggaaccatt 360

tgtagcagtg gtgattgatc caacaagaac aatatccgca gggaaagtga atcttggcgc 420

ctttaggaca tacccaaagg gctacaaacc tcctgatgaa ggaccttctg agtaccagac 480

tattccactt aataaaatag aagattttgg tgtacactgc aaacaatatt atgccttaga 540

agtctcatat ttcaaatcct ctttggatcg caaattgctt gagctgttgt ggaataaata 600

ctgggtgaat acgttgagtt cttctagctt gcttactaat gc 642

<210> 174

<211> 1317

<212> DNA

<213> Shigella Flexneri

<400> 174

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attccataat acagaagtgg aagctatgca agcagagagc tgctatcagc tagctagatc 120

attccatgtt caggaagatt atgaccaagc ttttcagtac tattatcaag ccacacagtt 180

tgcctcatcc tcttttgtgc tcccattttt tggtttggga caaatgtata tttatcgagg 240

tgacaaagaa aatgcatctc agtgctttga gaaggttttg aaagcttatc ctaataatta 300

cgaaactatg aaaattctcg gctctctcta tgctgcctca gaagatcaag aaaaacgaga 360

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gattgaattg gcacaaatct tagaacagac tgatatacag ggtgcccttt cagcctatgg 480

aacagcaaca cgaatccttc aggagaaagt gcaggccgat gttcctccag agattctcaa 540

taatgtgggt gccctccatt ttagacttgg aaacctaggg gaggctaaga aatatttttt 600

ggcgtcattg gaccgtgcaa aagcagaagc ggaacacgat gagcattact ataacgccat 660

ttccgttacc acgtcatata atctcgccag gctatatgag gcgatgtgtg aattccatga 720

agcagaaaaa ctgtataaaa acatcttacg cgaacatcct aattatgttg actgctattt 780

gcgcctagga gccatggcta gagataaggg aaacttttat gaggcttcag attggtttaa 840

ggaagctctt cagattaatc aggatcatcc agatgcttgg tctttgattg gcaatcttca 900

tttggcaaaa caagaatggg gtcctgggca gaagaagttt gagaggatat taaaacagcc 960

atccacacag agtgatacct attctatgct agcccttggc aacgtgtggc tccaaacttt 1020

acatcagccc acccgagatc gagaaaagga aaagcgtcat caagatcgtg ctctggccat 1080

ctacaaacaa gtactcagaa atgatgcaaa gaatctgtat gctgccaatg gcataggagc 1140

tgttttggcc cacaaaggat attttcgtga agctcgtgat gtatttgccc aagtaagaga 1200

agcaacagca gatattagtg atgtgtggct gaacttagca cacatctatg tggagcaaaa 1260

gcagtacatc agcgccgttc agatgtatga aaactgcctc cgaaagttct ataagca 1317

<210> 175

<211> 450

<212> DNA

<213> Shigella Flexneri

<400> 175

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atagtccttc gctggaagaa gcctgatatc ccccgcccca tcaagatcaa cctgctgttc 120

cccatcatct acttgctgtt ctgggccttc ctgctggtct tcagcctgtg gtcagagccg 180

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gtttactggc aacacaagcc caagtgtttc agtgacttca ttgagctgct aaccctggtg 300

agccagaaga tgtgtgtggt cgtgtacccc gaggtggagc ggggctcagg gacagaggag 360

gctaatgagg acatggagga gcagcagcag cccatgtacc aacccactcc cacgaaggac 420

aaggacgtgg cggggcagcc ccagccctga 450

<210> 176

<211> 271

<212> DNA

<213> Shigella Flexneri

<220>

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<222> (251)..(251)

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<220>

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<222> (268)..(268)

<223> misc_feature

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<223> misc_feature

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gtgtagattt atttctgggt tctctatcct gttctgttgg tctatatgtc tgttttcatg 180

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gattcctcca nttttgttct ttctgctnan g 271

<210> 177

<211> 238

<212> DNA

<213> Shigella Flexneri

<400> 177
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gaaacgagcc aggccagtaa tgaagcatcc tgaacagatt tttccaagac aaagagcaat 120

ccagtgggga gaagatggcc gtccatttca ctatctcttc tatactggca aacagtcata 180

ctattcatta atgattacca gctttacttc ccgatcacac aggacagaga acagctga 238

<210> 178

<211> 786

<212> DNA

<213> Shigella Flexneri

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catggaacgt atatgggaga agagaagctc attgcatctg ttgctggctc tgtggagaga 180

gtaaacaagt tgatctgtgt gaaagctttg aaaaccagat acattggtga agtaggagac 240

atcgtagtgg gacgaatcac agagaggaga agatctgcag aagatgagct tgcaatgaga 300

ggtttcttac aggaagggga ccttatcagt gctgaggtcc aggcagtgtt ctctgacgga 360

gctgtctctt tgcacacgag gagcctgaaa tatggaaaac taggtcaggg ggttttggtc 420

caggtttccc cctccctggt gaaacggcag aagacccact ttcatgattt gccatgtggt 480

gcctcagtga ttctcggtaa caacggcttc atctggattt acccaacacc tgagcacaaa 540

gaagaggaag caggggggctt cattgcaaac ctggagcctg tctctcttgc tgatcgagag 600

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gataccagca tcctgtactg ctatgaagca tcccttccac atcagatcaa agacatctta 720

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ggataa 786

<210> 179

<211> 996

<212> DNA

<213> Shigella Flexneri

<400> 179
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agttcagttg ctcgagaaaa gcccactgac cccgctccca cgggaaatga ttaccctgga 180

gactgttcta gaaaaactgg aaggagagtt acaggaagcc aaccagaacc agcaggcctt 240

gaaacaaagc ttcctagaac tgacagaact gaaatacctc ctgaagaaaa cccaagactt 300

ctttgagacg gaaaccaatt tagctgatga tttctttact gaggacactt ctggcctcct 360

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caacagggag aggatggctt cctttgagcg gttactgtgg cgaatctgcc gaggaaacgt 480

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tcagaagaac atattcatca tattttacca aggagagcag ctcaggcaga aaatcaagaa 600

gatctgtgat gggtttcgag ccactgtcta cccttgccca gagcctgcgg tggagcgcag 660

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agagtctcac cgccagcgcc tgctgcagga agccgctgcc aactggcact cctggctcat 780

caaggtgcag aagatgaaag ctgtctacca catcctgaac atgtgcaaca tcgacgtcac 840

ccagcagtgt gtcatcgccg agatctggtt cccggtggca gatgccacac gtatcaagag 900

ggcactggag caaggcatgg aactaagtgg ctcctccatg gcccccatca tgaccacagt 960

gcaatctaaa acagcccctc ccacatttaa caggac 996

<210> 180

<211> 669

<212> DNA

<213> Shigella Flexneri

<400> 180

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tctgcccttt gggaggggct ccccggaaac ctggatgctg ctgtctactc gcctcgaaca 180

caatggattc acttctttaa gggagacaag gtgtggcgct acattaattt caagatgtct 240

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gcccgaactg acttcagcag ctaccccaaa ccaatcaagg gtttgtttac gggagtgcca 420

aaccagccct cggctgctat gagttggcaa gatggccgag tctacttctt caagggcaaa 480

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cacaactgga tgcactgtcg tccccggact atagacacta ccccatcagg tgggaatacc 600

actccctcag gtacgggcat aaccttggat accactctct cagccacaga aaccacgttt 660

gaatactga 669

<210> 181

<211> 2716

<212> DNA

<213> Shigella Flexneri

<400> 181

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gcaaggtaat agagctgaag agggaccaaa cgctagttca ggtttcatga agactgctgt 180

actaggacct acactgaaaa atgtaatgat gaaaaataat aaactagcag tttcccctaa 240

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attggtgcct atcaaacaaa atgtatgttc accaggctca cagtcaggtg ctgcaaagga 360

cggtactgct aatttgcagc cccagacttt ggacactaat ggatttttaa caggagtaac 420

aactgagtta aatgacacag tttatatgaa agcagctact ccattttcat gttcatcttc 480

tatactttca gggaaagcaa gttcagaaaa agaaatgact ttgatatctc aaaggaataa 540

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ggttacagca tcagtgaatt tgaccacaaa atttgaaaca agagataatg ttgacttctg 660

gggaaatcat ctcactcaga gtcaccccga ggtattaggt accaccatta aaagtccaga 720

taaagtcaac tgtgttgcca aaccaaatgc atacaacagt ggagatatgc ataattattg 780

cattaattat ggcaactgtg agttacctgt tgaatcctcc aaccaaggat cattaccttt 840

tcataattac tcaaaagtga ataattctaa taaacgtcgt aggttttcag gaacagcagt 900

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gtatgtttta gaaaaaggac aaaacattga tggacaaaac ctgtacagta atgaaaatca 1140

aaatttagag tgtgcgactg aaaaatctaa atgggaagac ttttctaatg tcgattcacc 1200

tatgatgcct agaatcacat ctgttttctc tctccagagc caacaggcat cagaatttct 1260

gccacctgaa gtaaaccaat tgcttcagga tgtattgaaa ataaaacctg atgtaaaaca 1320

agactctagt aacactccaa ataaaggctt gccacttcat tgtgaccagt catttcaaaa 1380

acacgagaga gaaggcaaaa ttgttgaatc ttcgaaagat ttcaaagtgc aaggcatctt 1440

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caccgtcttg ggccagaacg acacgggctt cagctgcgac ggctcagcca gcaccttccg 780

cgtcatgttc aaggagccgg tggaggtgct gcccaacgtc aactacacgg cctgtgccac 840

gctcaagggc ccagactccc actacggcac caaaggcctg cgcaaggtga cacacgagtc 900

gcccaccacg ggcgccaaga cctgcttcac cttttgctac gcggccggga acaacaatgg 960

cacatccgtg gaggacggcc agatccccga ggtcatcttc tacacctag 1009

<210> 189

<211> 1090

<212> DNA

<213> Shigella Flexneri

<400> 189
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tgagaaacct tatcactgta ccaaatgtaa gaagagcttt agtcgaaatt cattgcttgt 120

tgagcatcaa agaattcaca ctggggaaag accccataaa tgtggtgaat gtgggaaagc 180

ctttcgatta agcacatacc ttatacaaca ccaaaaaatt cacactggcg agaagccttt 240

tctttgtatt gagtgtggaa aaagtttcag tcggagctca ttccttattg aacatcagag 300

gatccatact ggtgaaagac cttatcagtg caaagagtgt gggaaaagtt tcagtcagct 360

ttgcaacctt actcgtcatc agagaattca cacaggagac aagccccata aatgtgagga 420

atgtggaaaa gcctttagta gaagctcagg tcttattcag catcagagaa ttcacaccag 480

ggagaagact tatccataca atgaaactaa ggaaagtttt gatccaaatt gcagtcttgt 540

tatacagcag gaagtctacc ctaaggagaa atcttataaa tgtgatgaat gtgggaaaac 600

ttttagtgtt agtgctcatc ttgtacaaca tcaaagaatc cacactggtg aaaagcccta 660

tctatgtact gtctgtggga agagcttcag ccggagctca tttcttattg aacatcagag 720

aatccacact ggagagagac cctatctgtg cagacagtgt ggaaaaagct ttagtcagct 780

ttgtaatctt attcgacatc agggtgttca cacaggtaat aaaccccata aatgtgatga 840

atgtggaaag gcctttagcc ggaactcggg tcttattcag catcagagaa tacacacagg 900

agagaaacct tataagtgtg agaagtgcga caaaagtttc agtcaacagc gcagtcttgt 960

caaccatcag atgatccatg cagaggtgaa aacccaagaa acccatgaat gtgatgcttg 1020

tggtgaagcc tttaattgcc gtatttctct tattcagcat cagaaattgc acacagcatg 1080

gatgcaataa 1090

<210> 190

<211> 585

<212> DNA

<213> Shigella Flexneri

<400> 190

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ggtgatgcat gccagatcgg gaggcaattt ggaagtgatg ggtctgatgc taggaaaggt 120

ggatggtgaa accatgatca ttatggacag ttttgctttg cctgtggagg gcactgaaac 180

ccgagtaaat gctcaggctg ctgcatatga atacatggct gcatacatag aaaatgcaaa 240

acaggttggc cgccttgaaa atgcaatcgg gtggtatcat agccaccctg gctatggctg 300

ctggctttct gggattgatg ttagtactca gatgctcaat cagcagttcc aggaaccatt 360

tgtagcagtg gtgattgatc caacaagaac aatatccgca gggaaagtga atcttggcgc 420

ctttaggaca tacccaaagg gctacaaacc tcctgatgaa ggaccttctg agtaccagac 480

tattccactt aataaaatag aagattttgg tgtacactgc aaacaatatt atgccttaga 540

agtctcatat ttcaaatcct ctttggatcg caaattgctt gagct 585

<210> 191

<211> 433

<212> DNA

<213> Shigella Flexneri

<400> 191
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atatcaaggc ggtgtattct ttttgacaat tcatttttcct acagactacc ccttcaaacc 180

acctaaggtt gcatttacaa caagaattta tcatccaaat attaacagta atggcagcat 240

ttgtctcgat attctaagat cacagtggtc gcctgcttta acaatttcta aagttctttt 300

atccatttgt tcactgctat gtgatccaaa cccagatgac cccctagtgc cagagattgc 360

acggatctat aaaacagaca gagataagta caacagaata tctcgggaat ggactcagaa 420

gtatgccatg tga 433

<210> 192

<211> 928

<212> DNA

<213> Shigella Flexneri

<400> 192
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agcagaacct acagcagcgg cagttcctcc ccctgcagca cccataccca ctcagatgcc 120

accggtgccc tcgccctcac agcctccttc tggcaaacct gtgtctgcag taaaacccac 180

tgttgcccca ccactagctg agccaggagc tggcaaaggt ctgcgttcag aacatcggga 240

gaaaatgaac aggatgcggc agcgcattgc tcagcgtctg aaggaggccc agaatacatg 300

tgcaatgctg acaactttta atgagattga catgagtaac atccaggaga tgagggctcg 360

gcacaaagag gctttttga agaaacataa cctcaaacta ggcttcatgt cggcatttgt 420

gaaggcctca gcctttgcct tgcaggaaca gcctgttgta aatgcagtga ttgacgacac 480

aaccaaagag gtggtgtata gggattatat tgacatcagt gttgcagtgg ccaccccacg 540

gggtctggtg gttccagtca tcaggaatgt ggaagctatg aattttgcag atattgaacg 600

gaccatcact gaactgggag agaaggcccg aaagaatgaa cttgccattg aagatatgga 660

tggcggtacc ttcaccatta gcaatggagg cgtttttggc tcgctctttg gaacacccat 720

tatcaacccc cctcagtctg ccatcctggg gatgcatggc atctttgaca ggccagtggc 780

tataggaggc aaggtagagg tgcggcccat gatgtacgtg gcactgacct atgatcaccg 840

gctgattgat ggcagagagg ctgtgacttt cctccgcaaa atcaaggcag cggtagagga 900

tcccagagtc ctcctcctgg atctttag 928

<210> 193

<211> 463

<212> DNA

<213> Shigella Flexneri

<400> 193

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cttccgtaac atccaggttg atgaagctaa tttattgact tggcaagggc ttattgttcc 120

tgacaaccct ccatatgata agggagcctt cagaatcgaa atcaactttc cagcagagta 180

cccattcaaa ccaccgaaga tcacatttaa aacaaagatc tatcacccaa acatcgacga 240

aaaggggcag gtctgtctgc cagtaattag tgccgaaaac tggaagccag caaccaaaac 300

cgaccaagta atccagtccc tcatagcact ggtgaatgac ccccagcctg agcacccgct 360

tcgggctgac ctagctgaag aatactctaa ggaccgtaaa aaattctgta agaatgctga 420

agagtttaca aagaaatatg gggaaaagcg acctgtggac taa 463

<210> 194

<211> 462

<212> DNA

<213> Shigella Flexneri

<400> 194
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tacctgcgga acctgtccag cgatgatgcc aatgtcctgg tgtggcacgc tctcctccta 120

cccgaccaac ctccctacca cctgaaagcc ttcaacctgc gcatcagctt cccgccggag 180

tatccgttca agcctcccat gatcaaattc acaaccaaga tctaccaccc caacgtggac 240

gagaacggac agatttgcct gcccatcatc agcagtgaga actggaagcc ttgcaccaag 300

acttgccaag tcctggaggc cctcaatgtg ctggtgaata gaccgaatat cagggagccc 360

ctgcggatgg acctcgctga cctgctgaca cagaatccgg agctgttcag aaagaatgcc 420

gaagagttca ccctccgatt cggagtggac cggccctcct aa 462

<210> 195

<211> 307

<212> DNA

<213> Shigella Flexneri

<400> 195
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tgggaggaaa acttcacttt cttcattcac aatcccaagc gccaggacct tgaagttgag 120

gtcagagacg agcagcacca gtgttccctg gggaacctga aggtcccccc cagccagctg 180

ctcaccagtg aggacatgac tgtgagccag cgcttccagc tcagtaactc gggtccaaac 240

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ccagacc 307

<210> 196

<211> 460

<212> DNA

<213> Shigella Flexneri

<400> 196
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ggccatcctg gatggagcca gcatcaccct gcctcatggc accctctgtg aatgctacga 120

tgagctgggc aatcgctacc agctgcccat ctactgcctg tcaccgccgg tgaacctgct 180

gctggagcac acggaggagg agagcctgga gccccccgag cctccaccca gcgtgcgccg 240

tgagttcccg ctgaaggtgc gcctgtccac gggcaaggac gtgaggctca gcgccagcct 300

gcccgacaca gtggggcagc tcaagaggca gctgcacgcc caggagggca tcgagccatc 360

gtggcagcgg tggttcttct ccgggaagct gctcacagac cgcacacggc tccaggagac 420

caagatccag aaagattttg tcatccaggt catcatcaac 460

<210> 197

<211> 212

<212> DNA

<213> Shigella Flexneri

<400> 197
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agaggtgcac ggggctgccc aggaggcctt ggtcttcacc agttccatca accagagctt 120

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ggtggaagag gagtttgccc tccagggcgt ga 212

<210> 198

<211> 433

<212> DNA

<213> Shigella Flexneri

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tcctgttgga gatgatatgt tccattggca agctacaata atggggccaa atgacagtcc 120

ctatcagggt ggagtatttt tcttgacaat tcatttccca acagattacc ccttcaaacc 180

acctaaggtt gcatttacaa caagaattta tcatccaaat attaacagta atggcagcat 240

ttgtcttgat attctacgat cacagtggtc tccagcacta actatttcaa aagtactctt 300

gtccatctgt tctctgttgt gtgatcccaa tccagatgat cctttagtgc ctgagattgc 360

tcggatctac aaaacagata gagaaaagta caacagaata gctcgggaat ggactcagaa 420

gtatgcgatg taa 433

<210> 199

<211> 595

<212> DNA

<213> Shigella Flexneri

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cattcatatg gttaccatgg ggatgatgga cattcgtttt gttcttctgg aactggacaa 120

ccttatggac caactttcac tactggtgat gtcattggct gttgtgttaa tcttatcaac 180

aatacctgct tttacaccaa gaatggacat agtttaggta ttgctttcac tgacctaccg 240

ccaaatttgt atcctactgt ggggcttcaa acaccaggag aagtggtcga tgccaatttt 300

gggcaacatc ctttcgtgtt tgatatagaa gactatatgc gggagtggag aaccaaaatc 360

caggcacaga tagatcgatt tcctatcgga gatcgagaag gagaatggca gaccatgata 420

caaaaaatgg tttcatctta tttagtccac catgggtact gtgccacagc agaggccttt 480

gccagatcta cagaccagac cgttctagaa gaattagctt ccattaagaa tagacaaaga 540

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<210> 200

<211> 532

<212> DNA

<213> Shigella Flexneri

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ctctagcaaa accactgcta agttatccac tagtgctaaa agaattcaga aggagctagc 120

tgaaataacc cttgatcctc ctcctaattg cagtgctggg cctaaaggag ataacattta 180

tgaatggaga tcaactatac ttggtccacc gggttctgta tatgaaggtg gtgtgttttt 240

tctggatatc acattttcat cagattatcc atttaagcca ccaaaggtta ctttccgcac 300

cagaatctat cactgcaaca tcaacagtca gggagtcatc tgtctggaca tccttaaaga 360

caactggagt cccgctttga ctatttcaaa ggttttgctg tctatttgtt ccctttgac 420

agactgcaac cctgcggatc ctctggttgg aagcatagcc actcagtatt tgaccaacag 480

agcagaacac gacaggatag ccagacagtg gaccaagaga tacgcaacat aa 532

<210> 201

<211> 733

<212> DNA

<213> Shigella Flexneri

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gaatctggtc gagattctga agtcagtgcc agggagcaca tgagttccag cagctccctc 180

cagtcccggg aggagaagca agagcctgtt gtggtaaggc cctatccaca ggtgcagatg 240

ttgtcgacac accatgctgt cgcatcagcc acacctgttg cagtgacagc cccgccagca 300

cacctgacgc cagcagtgcc actttcattt tcggagggac ttatgaagcc gcccccgaag 360

cccaccatgc ctagccgtcc cattgctcct gctccacctt ctaccctgtc acttcccccc 420

aaggttccag ggcaggttac cgttaccatg gagagtagca tccctcaagc ttcagccatt 480

cctgtggcaa caatcagtgg acaacagggc catcccagta acctgcatca catcatgact 540

acaaatgtgc aaatgtctat catccgcagc aatgctcctg ggcccctct tcacattgga 600

gcttctcatt tacctcgagg tgcagctgct gctgctgtga tgtccagttc taaagtaacc 660

acagtcctga ggccgacctc acagctgcca aatgctgcta ctgctcagcc agcagtacag 720

cacatcattc acc 733

<210> 202

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tatagatgaa caagatcttt gctagcaagg agctgagagc ttagtgaaga aagagtgaaa 180

agtccacagt gagaacatgg aggngcacat acctgggctg caggcacact gcctntgcct 240

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gacttgagag ggatgagtgg gtcctgagaa ctcaggcaaa gctgagtagg tggccccact 180

atcaattaaa aaagagatca gcttacctgc tactantana gttaccctgg gctccgatgc 240

antgatggca gtgggggccg gnagccggng cccangggcc ctggcctnat nantnttgag 300

<210> 204

<211> 282

<212> DNA

<213> Shigella Flexneri

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gaacatcgag attacttttc ttcaccatgg caattgagta ctgatctttg tcttccatct 120

cttaagtaca tttacttctg aactatgtat gctatataat tcatatctgt gatagtagtg 180

ggtgacttga tagatattat ctggctatgt gtacttccat gttagcaagt gatttatgtg 240

tcaaagtttc tacccagtgg gaattaggtc agtttaattt tg 282

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<211> 301

<212> DNA

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gcttttgnnn nnttnctatc aangcgtgct tttcttttcc aactacanan gcacatggaa 180

gtggtcacta tccgctctct ccagtattat anccatcaga atnncttctt gcaggannna 240

ctggttgtgn ngangcntnt gtgggantta gacanngcng agnnggtntn cgggggttnn 300

t 301

<210> 206

<211> 1008

<212> DNA

<213> Shigella Flexneri

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acagcatcac ttttaaactt ctggaacctg cccaccactg cccaagtcac gattgaagcc 120

cagccaccaa aagtttccga ggggaaggat gttcttctac ttgtccacaa tttgccccag 180

aatcttactg gctacatctg gtacaaaggg caaatcaggg acctctacca ttacattaca 240

tcatatgtag tagacggtca aataattata tatgggcctg catatagtgg acgagaaaca 300

gcatattcca atgcatccct gctgatccag aatgtcaccc gggaggacgc aggatcctac 360

accttacaca tcataaagcg aggtgatggg actagaggag taactggata tttcaccttc 420

accttatacc tggagactcc caagccctcc atctccagca gcaacttaaa ccccagggag 480

gccatggaaa ctgtgatctt aacctgtgat cctgagactc cggacacaag ctaccagtgg 540

tggatgaatg gtcagagcct ccctatgact cataggtttc agctgtccga aaccaacagg 600

accctctttc tatttggtgt cacaaagtat actgcaggac cctatgaatg tgaaatacgg 660

aactcaggga gtgccagccg cagtgaccca gtcaccctga atctcctcca tggtccagac 720

ctccccagaa ttcacccttc atacaccaat taccgttcag gagataacct ctacttgtct 780

tgcttcgcga actctaaccc accggcacag tattcttgga caattaatgg gaagtttcag 840

caatcaggac aaaatctgtt tatcccccaa attactacaa agcatagcgg gctctatgtt 900

tgctctgttc gtaactcagc cactgggcag gaaagctcca catcgttgac agtcaaagtc 960

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<212> DNA

<213> Shigella Flexneri

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tgtattgggg acagatcaga gtttgcatga tgctggcccg cgagagacat tgatgcattt 180

tgctgtgcgg ctgggactgc tgaggttgac gtggttcctg ttgcagaagc caggtggccg 240

cagagctctc agtatccaca accaggaagg ggcgacgcct gtgagcttgg ccttggagcg 300

aggctatcac aagctgcacc agcttctaac cgaggagaat gctggagaac cagactcctg 360

gagcagttta tcctatgaaa taccgtatgg agactgttct gtgaggcatc atcgagagtt 420

ggacatctat acattaacct ctgagtctga ttcacatcat gaacacccat ttcctggaga 480

cggttgcact ggaccaattt ttaaacttat gaacatccaa cagcaactaa tgaaaacaaa 540

cctcaagcag atggacagtc ttatgccctt aatgatgaca gcacaggatc cttccagtgc 600

cccagagaca gatggccagt ttcttccctg tgcaccggag cccacggacc ctcagcgact 660

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tgaactcact cctcaccaga catttgtccg actccataac cagaagactg gccaggaagt 180

ggtgtttgtt gccgagccag acaacaagaa cgtgtacaag tttgaactgg atacctctga 240

aagaaagatt gaatttgact ctgcctctgg cacctacact ctctacttaa tcattggaga 300

tgccactttg aagaacccaa tcctctggaa tgtggctgat gtggtcatca agttccctga 360

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gcagcggcag cgagccagga aggagtggag gctgcaccgc ggcctgtctc accgcagggc 180

ctccttggag gagagagccg tttccagaaa ccccctgtgc accctgtgcc tggaggagcg 240

caggcaccca acagccacgc cctgcggcca cctgttctgc tgggagtgca tcaccgcgtg 300

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acacatacca gcagacaggt cccacgtggg aggcaccaca gacctttaag atagggtgaa 180

gccttgatag aaggagaaac agaagctgcc cactgtcttt acttagaagt ggagaacatg 240

gnattctgta tttatttatg ttgactgcgc anctttacnt ttntaaacc 289

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<211> 472

<212> DNA

<213> Shigella Flexneri

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tgaatggagg tcaactatat tgggaccccc aggatctgtc tatgaaggag gggtgttctt 180

tcttgacatt acctttcac cagactatcc gtttaaaccc cctaaggtta ccttccgaac 240

aagaatctat cactgtaata ttaacagcca aggtgtgatc tgtctggaca tcttaaagga 300

caactggagt ccggctttaa ctatttctaa agttctcctc tccatctgct cacttcttac 360

agattgcaac cctgctgacc ctctggtggg cagcatcgcc acacagtaca tgaccaacag 420

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<211> 291

<212> DNA

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acactgtata tctctatcag gaaattaaaa ttgttagctt atatctacat ttcaataaaa 180

tgtaagcctg ttgctatgtt gatagcaaat ctgtttaact tactggtcat taggctgtta 240

cgtacgtcaa tgaactggtg aaaggagaaa atttatgaaa catanctcaa c 291

<210> 213

<211> 395

<212> DNA

<213> Shigella Flexneri

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ctgctaacta cacagattgg gagaaaatcc cttccatgtc gaagaaccga gtccccgact 180

cctgctgcat taatgttact gtgggctgtg ggattaattt caacgagaag gcgatccata 240

aggagggctg tgtggagaag attgggggct ggctgaggaa aaatgtgctg gtggtagctg 300

cagcagccct tggaattgct tttgtcgagg ttttgggaat tgtctttgcc tgctgcctcg 360

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<211> 305

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ngggccacng nnggctgtna ntactgnatt tnanatnnnt attggnnnct ngcacatgtt 120

aaaggnnnca cagtttctgn actctaggag anattcttgn cctgttagng tnaaagtact 180

tttcactnga taagctatgn tgacgttnct tatnagaacn gnnnttantg ntgantgcat 240

gatntccatt catnatgtat ttgccatgag nngctaattn ncaanacgtg tcgtaatgag 300

aataa 305

<210> 215

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<212> DNA

<213> Shigella Flexneri

<400> 215

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aagaaccaga aagagaacaa gttcagccca agaaaaagga gggaaaaata tccagcaaaa 120

ccgctgctaa attgtcaact agtgctaaaa gaattcagaa ggaacttgca gaaatcacat 180

tggaccctcc tcccaactgt agtgctggac ccaaaggaga caacatttat gaatggaggt 240

caactatatt gggaccccca ggatctgtct atgaaggagg ggtgttcttt cttgacatta 300

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actgtaatat taacagccaa ggtgtga 387

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<211> 116

<212> PRT

<213> Shigella Flexneri

<400> 216

Phe Ser His Asp Ser Ser Phe Leu Cys Ala Ser Ser Asp Lys Gly Thr
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Val His Ile Phe Ala Leu Lys Asp Thr Arg Leu Asn Arg Arg Ser Ala
20 25 30

Leu Ala Arg Val Gly Lys Val Gly Pro Met Ile Gly Gln Tyr Val Asp
35 40 45

Ser Gln Trp Ser Leu Ala Ser Phe Thr Val Pro Ala Glu Ser Ala Cys
50 55 60

Ile Cys Ala Phe Gly Arg Asn Thr Ser Lys Asn Val Asn Ser Val Ile
65 70 75 80

Ala Ile Cys Val Asp Gly Thr Phe His Lys Tyr Val Phe Thr Pro Asp
85 90 95

Gly Asn Cys Asn Arg Glu Ala Phe Asp Val Tyr Leu Asp Ile Cys Asp
100 105 110

Asp Asp Asp Phe
115

<210> 217

<211> 346

<212> PRT

<213> Shigella Flexneri

<400> 217

Phe Ser Lys Ser Cys Glu Tyr Asn Gly Thr Thr Tyr Gln His Gly Glu
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Leu Phe Val Ala Glu Gly Leu Phe Gln Asn Arg Gln Pro Asn Gln Cys
20 25 30

Thr Gln Cys Ser Cys Ser Glu Gly Asn Val Tyr Cys Gly Leu Lys Thr
35 40 45

Cys Pro Lys Leu Thr Cys Ala Phe Pro Val Ser Val Pro Asp Ser Cys
50 55 60

Cys Arg Val Cys Arg Gly Asp Gly Glu Leu Ser Trp Glu His Ser Asp
65 70 75 80

Gly Asp Ile Phe Arg Gln Pro Ala Asn Arg Glu Ala Arg His Ser Tyr
85 90 95

His Arg Ser His Tyr Asp Pro Pro Pro Ser Arg Gln Ala Gly Gly Leu
100 105 110

Ser Arg Phe Pro Gly Ala Arg Ser His Arg Gly Ala Leu Met Asp Ser
115 120 125

Gln Gln Ala Ser Gly Thr Ile Val Gln Ile Val Ile Asn Asn Lys His
130 135 140

Lys His Gly Gln Val Cys Val Ser Asn Gly Lys Thr Tyr Ser His Gly
145 150 155 160

Glu Ser Trp His Pro Asn Leu Arg Ala Phe Gly Ile Val Glu Cys Val
165 170 175

Leu Cys Thr Cys Asn Val Thr Lys Gln Glu Cys Lys Lys Ile His Cys
180 185 190

Pro Asn Arg Tyr Pro Cys Lys Tyr Pro Gln Lys Ile Asp Gly Lys Cys
195 200 205

Cys Lys Val Cys Pro Gly Lys Lys Ala Lys Glu Leu Pro Gly Gln Ser
210 215 220

Phe Asp Asn Lys Gly Tyr Phe Cys Gly Glu Glu Thr Met Pro Val Tyr
225 230 235 240

Glu Ser Val Phe Met Glu Asp Gly Glu Thr Thr Arg Lys Ile Ala Leu
245 250 255

Glu Thr Glu Arg Pro Pro Gln Val Glu Val His Val Trp Thr Ile Arg
260 265 270

Lys Gly Ile Leu Gln His Phe His Ile Glu Lys Ile Ser Lys Arg Met
275 280 285

Phe Glu Glu Leu Pro His Phe Lys Leu Val Thr Arg Thr Thr Leu Ser
290 295 300

Gln Trp Lys Ile Phe Thr Glu Gly Glu Ala Gln Ile Ser Gln Met Cys
305 310 315 320

Ser Ser Arg Val Cys Arg Thr Glu Leu Glu Asp Leu Val Lys Val Leu
325 330 335

Tyr Leu Glu Arg Ser Glu Lys Gly His Cys
340 345

<210> 218

<211> 81

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<213> Shigella Flexneri

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<400> 218

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1 5 10 15

Cys Xaa Val Xaa Val Leu Cys Ala Cys His Asp Asp Xaa Trp Glu Leu
20 25 30

Xaa Pro Ser Arg Xaa Xaa Xaa Val Val Gly Xaa Xaa Pro Pro Xaa Xaa
35 40 45

Val Xaa Arg Arg Leu Xaa Phe Ala Lys Asp Leu Xaa Xaa Ala Ala Ser
50 55 60

Xaa Gly Glu Xaa Xaa Leu Gly Gly Xaa Leu Xaa Leu Lys Xaa Trp Asp
65 70 75 80

Ser

<210> 219

<211> 414

<212> PRT

<213> Shigella Flexneri

<400> 219

Ala Ala Met Glu Thr Glu Thr Ala Pro Leu Thr Leu Glu Ser Leu Pro
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Thr Asp Pro Leu Leu Leu Ile Leu Ser Phe Leu Asp Tyr Arg Asp Leu
20 25 30

Ile Asn Cys Cys Tyr Val Ser Arg Arg Leu Ser Gln Leu Ser Ser His
35 40 45

Asp Pro Leu Trp Arg Arg His Cys Lys Lys Tyr Trp Leu Ile Ser Glu
50 55 60

Glu Glu Lys Thr Gln Lys Asn Gln Cys Trp Lys Ser Leu Phe Ile Asp
65 70 75 80

Thr Tyr Ser Asp Val Gly Arg Tyr Ile Asp His Tyr Ala Ala Ile Lys
85 90 95

Lys Ala Trp Asp Asp Leu Lys Lys Tyr Leu Glu Pro Arg Cys Pro Arg
100 105 110

Met Val Leu Ser Leu Lys Glu Gly Ala Arg Glu Glu Asp Leu Asp Ala
115 120 125

Val Glu Ala Gln Ile Gly Cys Lys Leu Pro Asp Asp Tyr Arg Cys Ser
130 135 140

Tyr Arg Ile His Asn Gly Gln Lys Leu Val Val Pro Gly Leu Leu Gly
145 150 155 160

Ser Met Ala Leu Ser Asn His Tyr Arg Ser Glu Asp Leu Leu Asp Val
165 170 175

Asp Thr Ala Ala Gly Gly Phe Gln Gln Arg Gln Gly Leu Lys Tyr Cys
180 185 190

Leu Pro Leu Thr Phe Cys Ile His Thr Gly Leu Ser Gln Tyr Ile Ala
195 200 205

Val Glu Ala Ala Glu Gly Arg Asn Lys Asn Glu Val Phe Tyr Gln Cys
210 215 220

Pro Asp Gln Met Ala Arg Asn Pro Ala Ala Ile Asp Met Phe Ile Ile
225 230 235 240

Gly Ala Thr Phe Thr Asp Trp Phe Thr Ser Tyr Val Lys Asn Val Val
245 250 255

Ser Gly Gly Phe Pro Ile Ile Arg Asp Gln Ile Phe Arg Tyr Val His
260 265 270

Asp Pro Glu Cys Val Ala Thr Thr Gly Asp Ile Thr Val Ser Val Ser
275 280 285

Thr Ser Phe Leu Pro Glu Leu Ser Ser Val His Pro Pro His Tyr Phe
290 295 300

Phe Thr Tyr Arg Ile Arg Ile Glu Met Ser Lys Asp Ala Leu Pro Glu
305 310 315 320

Lys Ala Cys Gln Leu Asp Ser Arg Tyr Trp Arg Ile Thr Asn Ala Lys
325 330 335

Gly Asp Val Glu Glu Val Gln Gly Pro Gly Val Val Gly Glu Phe Pro
340 345 350

Ile Ile Ser Pro Gly Arg Val Tyr Glu Tyr Thr Ser Cys Thr Thr Phe
355 360 365

Ser Thr Thr Ser Gly Tyr Met Glu Gly Tyr Tyr Thr Phe His Phe Leu
370 375 380

Tyr Phe Lys Asp Lys Ile Phe Asn Val Ala Ile Pro Arg Phe His Met
385 390 395 400

Ala Cys Pro Thr Phe Arg Val Ser Ile Ala Arg Leu Val Ser
405 410

<210> 220

<211> 261

<212> PRT

<213> Shigella Flexneri

<400> 220

Gln Gln Gln Gln Gln Pro Pro Pro Pro Pro Ile Pro Ala Asn Gly Gln
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Gln Ala Ser Ser Gln Asn Glu Gly Leu Thr Ile Asp Leu Lys Asn Phe
20 25 30

Arg Lys Pro Gly Glu Lys Thr Phe Thr Gln Arg Ser Arg Leu Phe Val
35 40 45

Gly Asn Leu Pro Pro Asp Ile Thr Glu Glu Glu Met Arg Lys Leu Phe
50 55 60

Glu Lys Tyr Gly Lys Ala Gly Glu Val Phe Ile His Lys Asp Lys Gly
65 70 75 80

Phe Gly Phe Ile Arg Leu Glu Thr Arg Thr Leu Ala Glu Ile Ala Lys
85 90 95

Val Glu Leu Asp Asn Met Pro Leu Arg Gly Lys Gln Leu Arg Val Arg
100 105 110

Phe Ala Cys His Ser Ala Ser Leu Thr Val Arg Asn Leu Pro Gln Tyr
115 120 125

Val Ser Asn Glu Leu Leu Glu Glu Ala Phe Ser Val Phe Gly Gln Val
130 135 140

Glu Arg Ala Val Val Ile Val Asp Asp Arg Gly Arg Pro Ser Gly Lys

145 150 155 160

Gly Ile Val Glu Phe Ser Gly Lys Pro Ala Ala Arg Lys Ala Leu Asp
165 170 175

Arg Cys Ser Glu Gly Ser Phe Leu Leu Thr Thr Phe Pro Arg Pro Val
180 185 190

Thr Val Glu Pro Met Asp Gln Leu Asp Asp Glu Glu Gly Leu Pro Glu
195 200 205

Lys Leu Val Ile Lys Asn Gln Gln Phe His Lys Glu Arg Glu Gln Pro
210 215 220

Pro Arg Phe Ala Gln Pro Gly Ser Phe Glu Tyr Glu Tyr Ala Met Arg
225 230 235 240

Trp Lys Ala Leu Ile Glu Met Glu Lys Gln Gln Gln Asp Gln Val Asp
245 250 255

Arg Asn Ile Lys Glu
260

<210> 221

<211> 206

<212> PRT

<213> Shigella Flexneri

<400> 221

Gly Asp Phe Cys Ile Arg Val Phe Ser Glu Lys Lys Ala Asp Tyr Gln
1 5 10 15

Ala Val Asp Asp Glu Ile Glu Ala Asn Leu Glu Glu Phe Asp Ile Ser
20 25 30

Glu Asp Asp Ile Asp Asp Gly Val Arg Arg Leu Phe Ala Gln Leu Ala
35 40 45

Gly Glu Asp Ala Glu Ile Ser Ala Phe Glu Leu Gln Thr Ile Leu Arg
50 55 60

Arg Val Leu Ala Lys Arg Gln Asp Ile Lys Ser Asp Gly Phe Ser Ile
65 70 75 80

Glu Thr Cys Lys Ile Met Val Asp Met Leu Asp Ser Asp Gly Ser Gly
85 90 95

Lys Leu Gly Leu Lys Glu Phe Tyr Ile Leu Trp Thr Lys Ile Gln Lys
100 105 110

Tyr Gln Lys Ile Tyr Arg Glu Ile Asp Val Asp Arg Ser Gly Thr Met
115 120 125

Asn Ser Tyr Glu Met Arg Lys Ala Leu Glu Glu Ala Gly Phe Lys Met
130 135 140

Pro Cys Gln Leu His Gln Val Ile Val Ala Arg Phe Ala Asp Asp Gln
145 150 155 160

Leu Ile Ile Asp Phe Asp Asn Phe Val Arg Cys Leu Val Arg Leu Glu
165 170 175

Thr Leu Phe Lys Ile Phe Lys Gln Leu Asp Pro Glu Asn Thr Gly Thr
180 185 190

Ile Glu Leu Asp Leu Ile Ser Trp Leu Cys Phe Ser Val Leu
195 200 205

<210> 222

<211> 157

<212> PRT

<213> Shigella Flexneri

<400> 222

Met Val Asn Pro Gly Ser Ser Ser Gln Pro Pro Pro Val Thr Ala Gly
1 5 10 15

Ser Leu Ser Trp Lys Arg Cys Ala Gly Cys Gly Gly Lys Ile Ala Asp
20 25 30

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Arg Phe Leu Leu Tyr Ala Met Asp Ser Tyr Trp His Ser Arg Cys Leu
        35                  40                  45

Lys Cys Ser Cys Cys Gln Ala Gln Leu Gly Asp Ile Gly Thr Ser Cys
    50                  55                  60

Tyr Thr Lys Ser Gly Met Ile Leu Cys Arg Asn Asp Tyr Ile Arg Leu
65                  70                  75                  80

Phe Gly Asn Ser Gly Ala Cys Ser Ala Cys Gly Gln Ser Ile Pro Ala
                85                  90                  95

Ser Glu Leu Val Met Arg Ala Gln Gly Asn Val Tyr His Leu Lys Cys
            100                 105                 110

Phe Thr Cys Ser Thr Cys Arg Asn Arg Leu Val Pro Gly Asp Arg Phe
        115                 120                 125

His Tyr Ile Asn Gly Ser Leu Phe Cys Glu His Asp Arg Pro Thr Ala
    130                 135                 140

Leu Ile Asn Gly His Leu Asn Ser Leu Gln Ser Asn Pro
145                 150                 155
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<210> 223

<211> 121

<212> PRT

<213> Shigella Flexneri

<400> 223

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Leu Ser Leu Pro Gly Ile Leu His Phe Ile Gln His Glu Trp Ala Arg
1               5                   10                  15

Phe Glu Ala Glu Lys Ala Arg Trp Glu Ala Glu Arg Ala Glu Leu Gln
            20                  25                  30

Ala Gln Val Ala Phe Leu Gln Gly Glu Arg Lys Gly Gln Glu Asn Leu
        35                  40                  45
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Lys Thr Asp Leu Val Arg Arg Ile Lys Met Leu Glu Tyr Ala Leu Lys
50 55 60

Gln Glu Arg Ala Lys Tyr His Lys Leu Lys Phe Gly Thr Asp Leu Asn
65 70 75 80

Gln Gly Glu Lys Lys Ala Asp Val Ser Glu Gln Val Ser Asn Gly Pro
85 90 95

Val Glu Ser Val Thr Leu Glu Asn Ser Pro Leu Val Trp Lys Glu Gly
100 105 110

Arg Gln Leu Leu Arg Gln Tyr Leu Glu
115 120

<210> 224

<211> 336

<212> PRT

<213> Shigella Flexneri

<400> 224

Met Ala Ala Ser Leu Arg Leu Leu Gly Ala Ala Ser Gly Leu Arg Tyr
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Trp Ser Arg Arg Leu Arg Pro Ala Ala Gly Ser Phe Ala Ala Val Cys
20 25 30

Ser Arg Ser Val Ala Ser Lys Thr Pro Val Gly Phe Ile Gly Leu Gly
35 40 45

Asn Met Gly Asn Pro Met Ala Lys Asn Leu Met Lys His Gly Tyr Pro
50 55 60

Leu Ile Ile Tyr Asp Val Phe Pro Asp Ala Cys Lys Glu Phe Gln Asp
65 70 75 80

Ala Gly Glu Gln Val Val Ser Ser Pro Ala Asp Val Ala Glu Lys Ala
85 90 95

Asp Arg Ile Ile Thr Met Leu Pro Thr Ser Ile Asn Ala Ile Glu Ala

100 105 110

Tyr Ser Gly Ala Asn Gly Ile Leu Lys Lys Val Lys Lys Gly Ser Leu
115 120 125

Leu Ile Asp Ser Ser Thr Ile Asp Pro Ala Val Ser Lys Glu Leu Ala
130 135 140

Lys Glu Val Glu Lys Met Gly Ala Val Phe Met Asp Ala Pro Val Ser
145 150 155 160

Gly Gly Val Gly Ala Ala Arg Ser Gly Asn Leu Thr Phe Met Val Gly
165 170 175

Gly Val Glu Asp Glu Phe Ala Ala Ala Gln Glu Leu Leu Gly Cys Met
180 185 190

Gly Ser Asn Val Val Tyr Cys Gly Ala Val Gly Thr Gly Gln Ala Ala
195 200 205

Lys Ile Cys Asn Asn Met Leu Leu Ala Ile Ser Met Ile Gly Thr Ala
210 215 220

Glu Ala Met Asn Leu Gly Ile Arg Leu Gly Leu Asp Pro Lys Leu Leu
225 230 235 240

Ala Lys Ile Leu Asn Met Ser Ser Gly Arg Cys Trp Ser Ser Asp Thr
245 250 255

Tyr Asn Pro Val Pro Gly Val Met Asp Gly Val Pro Ser Ala Asn Asn
260 265 270

Tyr Gln Gly Gly Phe Gly Thr Thr Leu Met Ala Lys Asp Leu Gly Leu
275 280 285

Ala Gln Asp Ser Ala Thr Ser Thr Lys Ser Pro Ile Leu Leu Gly Ser
290 295 300

Leu Ala His Gln Ile Tyr Arg Met Met Cys Ala Lys Gly Tyr Ser Lys
305 310 315 320

Lys Asp Phe Ser Ser Val Phe Gln Phe Leu Arg Glu Glu Glu Thr Phe
325 330 335

<210> 225

<211> 227

<212> PRT

<213> Shigella Flexneri

<400> 225

Ala Glu Glu Glu Glu Ala Glu Val Arg Gln Pro Lys Gly Pro Asp Pro
1 5 10 15

Asp Ser Leu Ser Ser Gln Phe Met Ala Tyr Ile Glu Gln Arg Arg Ile
20 25 30

Ser His Glu Gly Ser Pro Val Lys Pro Val Ala Ile Arg Glu Phe Gln
35 40 45

Lys Thr Glu Asp Met Arg Arg Tyr Leu His Gln Asn Arg Val Pro Ala
50 55 60

Glu Pro Ser Ser Leu Leu Ser Leu Ser Ala Ser His Asn Gln Leu Ser
65 70 75 80

His Thr Asp Leu Glu Leu His Gln Arg Arg Glu Gln Leu Val Glu Arg
85 90 95

Thr Arg Arg Glu Ala Gln Leu Ala Ala Leu Gln Tyr Glu Glu Glu Lys
100 105 110

Ile Arg Thr Lys Gln Ile Gln Arg Asp Ala Val Leu Asp Phe Val Lys
115 120 125

Gln Lys Ala Ser Gln Ser Pro Gln Lys Gln His Pro Leu Leu Asp Gly
130 135 140

Val Asp Gly Glu Cys Pro Phe Pro Ser Arg Arg Ser Gln His Thr Asp
145 150 155 160

Asp Ser Ala Leu Cys Met Ser Leu Ser Gly Leu Asn Gln Val Gly Cys
165 170 175

Ala Ala Thr Leu Pro His Ser Ser Ala Phe Thr Pro Leu Lys Ser Asp
180 185 190

Asp Arg Pro Asn Ala Leu Leu Ser Ser Pro Ala Thr Glu Thr Val His
195 200 205

His Ser Pro Ala Tyr Ser Phe Pro Ala Ala Ile Gln Arg Asn Gln Pro
210 215 220

Gln Arg Pro
225

<210> 226

<211> 234

<212> PRT

<213> Shigella Flexneri

<400> 226

Met Ile Leu Gln Glu Leu Pro Asp Leu Glu Glu Leu Phe Leu Cys Leu
1 5 10 15

Asn Asp Tyr Glu Thr Val Ser Cys Pro Ser Ile Cys Cys His Ser Leu
20 25 30

Lys Leu Leu His Ile Thr Asp Asn Asn Leu Gln Asp Trp Thr Glu Ile
35 40 45

Arg Lys Leu Gly Val Met Phe Pro Ser Leu Asp Thr Leu Val Leu Ala
50 55 60

Asn Asn His Leu Asn Ala Ile Glu Glu Pro Asp Asp Ser Leu Ala Arg
65 70 75 80

Leu Phe Pro Asn Leu Arg Ser Ile Ser Leu His Lys Ser Gly Leu Gln
85 90 95

Ser Trp Glu Asp Ile Asp Lys Leu Asn Ser Phe Pro Lys Leu Glu Glu
100 105 110

Val Arg Leu Leu Gly Ile Pro Leu Leu Gln Pro Tyr Thr Thr Glu Glu
115 120 125

Arg Arg Lys Leu Val Ile Ala Arg Leu Pro Ser Val Ser Lys Leu Asn
130 135 140

Gly Ser Val Val Thr Asp Gly Glu Arg Glu Asp Ser Glu Arg Phe Phe
145 150 155 160

Ile Arg Tyr Tyr Val Asp Val Pro Gln Glu Glu Val Pro Phe Arg Tyr
165 170 175

His Glu Leu Ile Thr Lys Tyr Gly Lys Leu Glu Pro Leu Ala Glu Val
180 185 190

Asp Leu Arg Pro Gln Ser Ser Ala Lys Val Glu Val His Phe Asn Asp
195 200 205

Gln Val Glu Glu Met Ser Ile Arg Leu Asp Gln Thr Val Ala Glu Leu
210 215 220

Lys Lys Gln Leu Lys Thr Leu Val Gln Leu
225 230

<210> 227

<211> 142

<212> PRT

<213> Shigella Flexneri

<400> 227

Val Asp Glu Val Leu Gln Ile Pro Pro Ser Leu Leu Thr Cys Gly Gly
1 5 10 15

Cys Gln Gln Asn Ile Gly Asp Arg Tyr Phe Leu Lys Ala Ile Asp Gln
20 25 30

Tyr Trp His Glu Asp Cys Leu Ser Cys Asp Leu Cys Gly Cys Arg Leu
35 40 45

Gly Glu Val Gly Arg Arg Leu Tyr Tyr Lys Leu Gly Arg Lys Leu Cys

50 55 60

Arg Arg Asp Tyr Leu Arg Leu Phe Gly Gln Asp Gly Leu Cys Ala Ser
65 70 75 80

Cys Asp Lys Arg Ile Arg Ala Tyr Glu Met Thr Met Arg Val Lys Asp
85 90 95

Lys Val Tyr His Leu Glu Cys Phe Lys Cys Ala Ala Cys Gln Lys His
100 105 110

Phe Cys Val Gly Asp Arg Tyr Leu Leu Ile Asn Ser Asp Ile Val Cys
115 120 125

Glu Gln Asp Ile Tyr Glu Trp Thr Lys Ile Asn Gly Met Ile
130 135 140

<210> 228

<211> 135

<212> PRT

<213> Shigella Flexneri

<400> 228

Leu Lys Thr Ala Gly Lys Ser Glu Pro Ser Ser Lys Leu Arg Lys Gln
1 5 10 15

Leu Lys Lys Gln Gln Asp Ser Leu Asp Val Val Asp Ser Ser Val Ser
20 25 30

Ser Leu Cys Leu Ser Asn Thr Ala Ser Ser His Gly Thr Arg Lys Leu
35 40 45

Phe Gln Ile Tyr Ser Lys Ser Pro Phe Tyr Arg Ala Ala Ser Gly Asn
50 55 60

Glu Ala Leu Gly Met Glu Gly Pro Leu Gly Gln Thr Lys Phe Leu Glu
65 70 75 80

Asp Lys Pro Gln Phe Ile Ser Arg Gly Thr Phe Asn Pro Glu Lys Gly
85 90 95

Lys Gln Lys Leu Lys Asn Val Lys Asn Ser Pro Gln Lys Thr Lys Glu
100 105 110

Thr Pro Glu Gly Thr Val Met Ser Gly Arg Arg Lys Thr Val Asp Pro
115 120 125

Asp Cys Thr Ser Asn Gln Gln
130 135

<210> 229

<211> 206

<212> PRT

<213> Shigella Flexneri

<400> 229

Met Gly Ile Gly Leu Ser Ala Gln Gly Val Asn Met Asn Arg Leu Pro
1 5 10 15

Gly Trp Asp Lys His Ser Tyr Gly Tyr His Gly Asp Asp Gly His Ser
20 25 30

Phe Cys Ser Ser Gly Thr Gly Gln Pro Tyr Gly Pro Thr Phe Thr Thr
35 40 45

Gly Asp Val Ile Gly Cys Cys Val Asn Leu Ile Asn Asn Thr Cys Phe
50 55 60

Tyr Thr Lys Asn Gly His Ser Leu Gly Ile Ala Phe Thr Asp Leu Pro
65 70 75 80

Pro Asn Leu Tyr Pro Thr Val Gly Leu Gln Thr Pro Gly Glu Val Val
85 90 95

Asp Ala Asn Phe Gly Gln His Pro Phe Val Phe Asp Ile Glu Asp Tyr
100 105 110

Met Arg Glu Trp Arg Thr Lys Ile Gln Ala Gln Ile Asp Arg Phe Pro
115 120 125

Ile Gly Asp Arg Glu Gly Glu Trp Gln Thr Met Ile Gln Lys Met Val
130 135 140

Ser Ser Tyr Leu Val His His Gly Tyr Cys Ala Thr Ala Glu Ala Phe
145 150 155 160

Ala Arg Ser Thr Asp Gln Thr Val Leu Glu Glu Leu Ala Ser Ile Lys
165 170 175

Asn Arg Gln Arg Ile Gln Lys Leu Val Leu Ala Gly Arg Met Gly Glu
180 185 190

Ala Ile Glu Thr Thr Gln Gln Leu Tyr Pro Ser Leu Leu Glu
195 200 205

<210> 230

<211> 96

<212> PRT

<213> Shigella Flexneri

<400> 230

Phe His Thr Gly Thr Pro Ser Glu Gly His Gln His Gln Arg Pro Lys
1 5 10 15

Val Asp Lys Ser Thr Lys Leu Arg Lys Asn Gln Cys Lys Lys Ala Glu
20 25 30

Asn Ser Lys Asn Gln Lys Gly Ser Ser Pro Pro Lys Asp Gln Asn Ser
35 40 45

Ser Pro Ala Arg Glu Gln Asn Gln Met Glu Asn Glu Phe Asp Glu Leu
50 55 60

Thr Glu Val Gly Phe Arg Arg Trp Val Ile Thr Ser Lys Leu Lys Glu
65 70 75 80

His Val Leu Thr Gln Cys Lys Glu Val Lys Asn Leu Glu Lys Arg Leu
85 90 95

<210> 231

<211> 65

<212> PRT

<213> Shigella Flexneri

<220>

<221> MISC_FEATURE

<222> (76)..(76)

<223> MISC_FEATURE

<220>

<221> MISC_FEATURE

<222> (78)..(78)

<223> MISC_FEATURE

<220>

<221> MISC_FEATURE

<222> (80)..(80)

<223> MISC_FEATURE

<220>

<221> MISC_FEATURE

<222> (82)..(82)

<223> MISC_FEATURE

<400> 231

Ala Val Asp Gly Glu Gly Ala Gly Leu Thr Ser Glu Ala Trp Lys Tyr
1 5 10 15

Gln Val Thr Ser His Arg Glu Asp Arg Phe Pro Leu Ser Ser Arg Leu

20 25 30

Arg Leu Ala Leu Lys Asn Leu Gly Ala Asp Arg His Arg Ala Gly Ser
35 40 45

Leu Val Glu Gln Glu Leu Ser Gly Leu Phe Ser Leu Met Ser Gly Arg
50 55 60

Lys
65

<210> 232

<211> 431

<212> PRT

<213> Shigella Flexneri

<400> 232

Met Trp Ala Leu Gly Gln Ala Gly Phe Ala Asn Leu Thr Glu Gly Leu
1 5 10 15

Lys Val Trp Leu Gly Ile Met Leu Pro Val Leu Gly Ile Lys Ser Leu
20 25 30

Ser Pro Phe Ala Ile Thr Tyr Leu Asp Arg Leu Leu Leu Met His Pro
35 40 45

Asn Leu Thr Lys Gly Phe Gly Met Ile Gly Pro Lys Asp Phe Phe Pro
50 55 60

Leu Leu Asp Phe Ala Tyr Met Pro Asn Asn Ser Leu Thr Pro Ser Leu
65 70 75 80

Gln Glu Gln Leu Cys Gln Leu Tyr Pro Arg Leu Lys Val Leu Ala Phe
85 90 95

Gly Ala Lys Pro Asp Ser Thr Leu His Thr Tyr Phe Pro Ser Phe Leu
100 105 110

Ser Arg Ala Thr Pro Ser Cys Pro Pro Glu Met Lys Lys Glu Leu Leu
115 120 125

Ser Ser Leu Thr Glu Cys Leu Thr Val Asp Pro Leu Ser Ala Ser Val
130 135 140

Trp Arg Gln Leu Tyr Pro Lys His Leu Ser Gln Ser Ser Leu Leu Leu
145 150 155 160

Glu His Leu Leu Ser Ser Trp Glu Gln Ile Pro Lys Lys Val Gln Lys
165 170 175

Ser Leu Gln Glu Thr Ile Gln Ser Leu Lys Leu Thr Asn Gln Glu Leu
180 185 190

Leu Arg Lys Gly Ser Ser Asn Asn Gln Asp Val Val Thr Cys Asp Met
195 200 205

Ala Cys Lys Gly Leu Leu Gln Gln Val Gln Gly Pro Arg Leu Pro Trp
210 215 220

Thr Arg Leu Leu Leu Leu Leu Leu Val Phe Ala Val Gly Phe Leu Cys
225 230 235 240

His Asp Leu Arg Ser His Ser Ser Phe Gln Ala Ser Leu Thr Gly Arg
245 250 255

Leu Leu Arg Ser Ser Gly Phe Leu Pro Ala Ser Gln Gln Ala Cys Ala
260 265 270

Lys Leu Tyr Ser Tyr Ser Leu Gln Gly Tyr Ser Trp Leu Gly Glu Thr
275 280 285

Leu Pro Leu Trp Gly Ser His Leu Leu Thr Val Val Arg Pro Ser Leu
290 295 300

Gln Leu Ala Trp Ala His Thr Asn Ala Thr Val Ser Phe Leu Ser Ala
305 310 315 320

His Cys Ala Ser His Leu Ala Trp Phe Gly Asp Ser Leu Thr Ser Leu
325 330 335

Ser Gln Arg Leu Gln Ile Gln Leu Pro Asp Ser Val Asn Gln Leu Leu
340 345 350

Arg Tyr Leu Arg Glu Leu Pro Leu Leu Phe His Gln Asn Val Leu Leu
355 360 365

Pro Leu Trp His Leu Leu Leu Glu Ala Leu Ala Trp Ala Gln Glu His
370 375 380

Cys His Glu Ala Cys Arg Gly Glu Val Thr Trp Asp Cys Met Lys Thr
385 390 395 400

Gln Leu Ser Glu Ala Val His Trp Thr Trp Leu Cys Leu Gln Asp Ile
405 410 415

Thr Val Ala Phe Leu Asp Trp Ala Leu Ala Leu Ile Ser Gln Gln
420 425 430

<210> 233

<211> 158

<212> PRT

<213> Shigella Flexneri

<400> 233

Met Gly Ile Gly Leu Ser Ala Gln Gly Val Asn Met Asn Arg Leu Pro
1 5 10 15

Gly Trp Asp Lys His Ser Tyr Gly Tyr His Gly Asp Asp Gly His Ser
20 25 30

Phe Cys Ser Ser Gly Thr Gly Gln Pro Tyr Gly Pro Thr Phe Thr Thr
35 40 45

Gly Asp Val Ile Gly Cys Cys Val Asn Leu Ile Asn Asn Thr Cys Phe
50 55 60

Tyr Thr Lys Asn Gly His Ser Leu Gly Ile Ala Phe Thr Asp Leu Pro
65 70 75 80

Pro Asn Leu Tyr Pro Thr Val Gly Leu Gln Thr Pro Gly Glu Val Val
85 90 95

Asp Ala Asn Phe Gly Gln His Pro Phe Val Phe Asp Ile Glu Asp Tyr
100 105 110

Met Arg Glu Trp Arg Thr Lys Ile Gln Ala Gln Ile Asp Arg Phe Pro
115 120 125

Ile Gly Asp Arg Glu Gly Glu Trp Gln Thr Met Ile Gln Lys Met Val
130 135 140

Ser Ser Tyr Leu Val His His Gly Tyr Cys Ala Thr Ala Glu
145 150 155

<210> 234

<211> 523

<212> PRT

<213> Shigella Flexneri

<400> 234

Thr Asn Leu Lys Arg Gln Ala Asn Lys Lys Ser Glu Gly Ser Leu Ala
1 5 10 15

Tyr Val Lys Gly Gly Leu Ser Thr Phe Phe Glu Ala Gln Asp Ala Leu
20 25 30

Ser Ala Ile His Gln Lys Leu Glu Ala Asp Gly Thr Glu Lys Val Glu
35 40 45

Gly Ser Met Thr Gln Lys Leu Glu Asn Val Leu Asn Arg Ala Ser Asn
50 55 60

Thr Ala Asp Thr Leu Phe Gln Glu Val Leu Gly Arg Lys Asp Lys Ala
65 70 75 80

Asp Ser Thr Arg Asn Ala Leu Asn Val Leu Gln Arg Phe Lys Phe Leu
85 90 95

Phe Asn Leu Pro Leu Asn Ile Glu Arg Asn Ile Gln Lys Gly Asp Tyr
100 105 110

Asp Val Val Ile Asn Asp Tyr Glu Lys Ala Lys Ser Leu Phe Gly Lys

115 120 125

Thr Glu Val Gln Val Phe Lys Lys Tyr Tyr Ala Glu Val Glu Thr Arg
130 135 140

Ile Glu Ala Leu Arg Glu Leu Leu Leu Asp Lys Leu Leu Glu Thr Pro
145 150 155 160

Ser Thr Leu His Asp Gln Lys Arg Tyr Ile Arg Tyr Leu Ser Asp Leu
165 170 175

His Ala Ser Gly Asp Pro Ala Trp Gln Cys Ile Gly Ala Gln His Lys
180 185 190

Trp Ile Leu Gln Leu Met His Ser Cys Lys Glu Gly Tyr Val Lys Asp
195 200 205

Leu Lys Gly Asn Pro Gly Leu His Ser Pro Met Leu Asp Leu Asp Asn
210 215 220

Asp Thr Arg Pro Ser Val Leu Gly His Leu Ser Gln Thr Ala Ser Leu
225 230 235 240

Lys Arg Gly Ser Ser Phe Gln Ser Gly Arg Asp Asp Thr Trp Arg Tyr
245 250 255

Lys Thr Pro His Arg Val Ala Phe Val Glu Lys Leu Thr Lys Leu Val
260 265 270

Leu Ser Gln Leu Pro Asn Phe Trp Lys Leu Trp Ile Ser Tyr Val Asn
275 280 285

Gly Ser Leu Phe Ser Glu Thr Ala Glu Lys Ser Gly Gln Ile Glu Arg
290 295 300

Ser Lys Asn Val Arg Gln Arg Gln Asn Asp Phe Lys Lys Met Ile Gln
305 310 315 320

Glu Val Met His Ser Leu Val Lys Leu Thr Arg Gly Ala Leu His Pro
325 330 335

Leu Ser Ile Arg Asp Gly Glu Ala Lys Gln Tyr Gly Gly Trp Glu Val
340 345 350

Lys Cys Glu Leu Ser Gly Gln Trp Leu Ala His Ala Ile Gln Thr Val
355 360 365

Arg Leu Thr His Glu Ser Leu Thr Ala Leu Glu Ile Pro Asn Asp Leu
370 375 380

Leu Gln Thr Ile Gln Asp Leu Ile Leu Asp Leu Arg Val Arg Cys Val
385 390 395 400

Met Ala Thr Leu Gln His Thr Ala Glu Glu Ile Lys Arg Leu Ala Glu
405 410 415

Lys Glu Asp Trp Ile Val Asp Asn Glu Gly Leu Thr Ser Leu Pro Cys
420 425 430

Gln Phe Glu Gln Cys Ile Val Cys Ser Leu Gln Ser Leu Lys Gly Val
435 440 445

Leu Glu Cys Lys Pro Gly Glu Ala Ser Val Phe Gln Gln Pro Lys Thr
450 455 460

Gln Glu Glu Val Cys Gln Leu Ser Ile Asn Ile Met Gln Val Phe Ile
465 470 475 480

Tyr Cys Leu Glu Gln Leu Ser Thr Lys Pro Asp Ala Asp Ile Asp Thr
485 490 495

Thr His Leu Ser Val Asp Val Ser Ser Pro Asp Leu Phe Gly Ser Ile
500 505 510

His Glu Asp Phe Ser Leu Thr Ser Glu Gln Arg
515 520

<210> 235

<211> 61

<212> PRT

<213> Shigella Flexneri

<220>

<221> MISC_FEATURE

<222> (34)..(34)

<223> MISC_FEATURE

<400> 235

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Gln Tyr Lys Lys Ala Leu Glu Asn Glu Thr Asn Glu Glu Lys Ser Gly
1               5                  10                  15

Thr Pro Gly Ala Asp Lys Ala Glu Lys Arg Tyr Lys Tyr Thr Val Lys
            20                  25                  30

Leu Xaa Pro Val Ser Leu Tyr Ser Ser Arg Glu Ala Thr Arg Ile Tyr
        35                  40                  45

Lys Glu Asn Gly Ser Gln Arg Arg Ser Glu Lys Arg Thr
    50                  55                  60
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<210> 236

<211> 96

<212> PRT

<213> Shigella Flexneri

<400> 236

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Pro Glu Ile Cys Lys Met Ala Asp Asn Leu Asp Glu Phe Ile Glu Glu
1               5                  10                  15

Gln Lys Ala Arg Leu Ala Glu Asp Lys Ala Glu Leu Glu Ser Asp Pro
            20                  25                  30

Pro Tyr Met Glu Met Lys Gly Lys Leu Ser Ala Lys Leu Ser Glu Asn
        35                  40                  45

Ser Lys Ile Leu Ile Ser Met Ala Lys Glu Asn Ile Pro Pro Asn Ser
    50                  55                  60

Gln Gln Thr Arg Gly Ser Leu Gly Ile Asp Tyr Gly Leu Ser Leu Pro
65                  70                  75                  80
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Leu Gly Glu Asp Tyr Glu Arg Lys Lys His Lys Leu Lys Glu Glu Leu
85 90 95

<210> 237

<211> 128

<212> PRT

<213> Shigella Flexneri

<400> 237

Asp Gln Gly Thr Pro Gln Tyr Met Glu Asn Met Glu Gln Val Phe Glu
1 5 10 15

Gln Cys Gln Gln Phe Glu Glu Lys Arg Leu Arg Phe Phe Arg Glu Val
20 25 30

Leu Leu Glu Val Gln Lys His Leu Asn Leu Ser Asn Val Ala Gly Tyr
35 40 45

Lys Ala Ile Tyr His Asp Leu Glu Gln Ser Ile Arg Ala Ala Asp Ala
50 55 60

Val Glu Asp Leu Arg Trp Phe Arg Ala Asn His Gly Pro Gly Met Ala
65 70 75 80

Met Asn Trp Pro Gln Phe Glu Glu Trp Ser Ala Asp Leu Ile Arg Thr
85 90 95

Leu Ser Arg Arg Glu Lys Lys Lys Ala Thr Asp Gly Phe Thr Leu Thr
100 105 110

Gly Ile Asn Gln Thr Gly Asp Gln Phe Leu Pro Ser Lys Pro Ser Ser
115 120 125

<210> 238

<211> 212

<212> PRT

<213> Shigella Flexneri

<400> 238

Pro Pro Ala Met Asp Trp Ile Phe Gln Cys Ile Ser Tyr His Ala Pro
1 5 10 15

Glu Ala Leu Leu Thr Glu Met Met Glu Arg Cys Lys Lys Leu Gly Asn
20 25 30

Asn Ala Leu Leu Leu Asn Ser Val Met Ser Ala Phe Arg Ala Glu Phe
35 40 45

Ile Ala Thr Arg Ser Met Asp Phe Ile Gly Met Ile Lys Glu Cys Asp
50 55 60

Glu Ser Gly Phe Pro Lys His Leu Leu Phe Arg Ser Leu Gly Leu Asn
65 70 75 80

Leu Ala Leu Ala Asp Pro Pro Glu Ser Asp Arg Leu Gln Ile Leu Asn
85 90 95

Glu Ala Trp Lys Val Ile Thr Lys Leu Lys Asn Pro Gln Asp Tyr Ile
100 105 110

Asn Cys Ala Glu Val Trp Val Glu Tyr Thr Cys Lys His Phe Thr Lys
115 120 125

Arg Glu Val Asn Thr Val Leu Ala Asp Val Ile Lys His Met Thr Pro
130 135 140

Asp Arg Ala Phe Glu Asp Ser Tyr Pro Gln Leu Gln Leu Ile Ile Lys
145 150 155 160

Lys Val Ile Ala His Phe His Asp Phe Ser Val Leu Phe Ser Val Glu
165 170 175

Lys Phe Leu Pro Phe Leu Asp Met Phe Gln Lys Glu Ser Val Arg Val
180 185 190

Glu Val Cys Lys Cys Ile Met Asp Ala Phe Ile Lys His Gln Gln Glu
195 200 205

Pro Thr Lys Asp
210

<210> 239

<211> 156

<212> PRT

<213> Shigella Flexneri

<400> 239

Phe Arg Leu Glu Gln Leu Glu Cys Leu Asp Asp Ala Glu Lys Lys Leu
1 5 10 15

Asn Leu Ala Gln Lys Cys Phe Lys Asn Cys Tyr Gly Glu Asn His Gln
20 25 30

Arg Leu Val His Ile Lys Gly Asn Cys Gly Lys Glu Lys Val Leu Phe
35 40 45

Leu Arg Leu Tyr Leu Leu Gln Gly Ile Arg Asn Tyr His Ser Gly Asn
50 55 60

Asp Val Glu Ala Tyr Glu Tyr Leu Asn Arg His Val Ser Ser Leu Lys
65 70 75 80

Ser Tyr Ile Leu Ile His Gln Lys Trp Thr Ile Cys Cys Ser Trp Gly
85 90 95

Leu Leu Pro Arg Lys His Arg Leu Gly Leu Arg Ala Cys Asp Gly Asn
100 105 110

Val Asp His Ala Ala Thr His Ile Thr Asn Arg Arg Glu Glu Leu Ala
115 120 125

Gln Ile Arg Lys Glu Glu Lys Glu Lys Lys Arg Arg Arg Leu Glu Asn
130 135 140

Ile Arg Phe Leu Lys Gly Met Gly Tyr Ser Thr His
145 150 155

<210> 240

<211> 116

<212> PRT

<213> Shigella Flexneri

<400> 240

Asn Lys Leu Arg Val Leu Asp Pro Glu Val Thr Gln Gln Thr Ile Glu
1 5 10 15

Leu Lys Glu Glu Cys Lys Asp Phe Val Asp Lys Ile Gly Gln Phe Gln
20 25 30

Lys Ile Val Gly Gly Leu Ile Glu Leu Val Asp Gln Leu Ala Lys Glu
35 40 45

Ala Glu Asn Glu Lys Met Lys Ala Ile Gly Ala Arg Asn Leu Leu Lys
50 55 60

Ser Ile Ala Lys Gln Arg Glu Ala Gln Gln Gln Gln Leu Gln Ala Leu
65 70 75 80

Ile Ala Glu Lys Lys Met Gln Leu Glu Arg Tyr Arg Val Glu Tyr Glu
85 90 95

Ala Leu Cys Lys Val Glu Ala Glu Gln Asn Glu Phe Ile Asp Gln Phe
100 105 110

Ile Phe Gln Lys
115

<210> 241

<211> 342

<212> PRT

<213> Shigella Flexneri

<400> 241

Met Ala Val Glu Thr Leu Ser Pro Asp Trp Glu Phe Asp Arg Val Asp
1 5 10 15

Asp Gly Ser Gln Lys Ile His Ala Glu Val Gln Leu Lys Asn Tyr Gly
20 25 30

Lys Phe Leu Glu Glu Tyr Thr Ser Gln Leu Arg Arg Ile Glu Asp Ala
35 40 45

Leu Asp Asp Ser Ile Gly Asp Val Trp Asp Phe Asn Leu Asp Pro Ile
50 55 60

Ala Leu Lys Leu Leu Pro Tyr Glu Gln Ser Ser Leu Leu Glu Leu Ile
65 70 75 80

Lys Thr Glu Asn Lys Val Leu Asn Lys Val Ile Thr Val Tyr Ala Ala
85 90 95

Leu Cys Cys Glu Ile Lys Lys Leu Lys Tyr Glu Ala Glu Thr Lys Phe
100 105 110

Tyr Asn Gly Leu Leu Phe Tyr Gly Glu Gly Ala Thr Asp Ala Ser Met
115 120 125

Val Glu Gly Asp Cys Gln Ile Gln Met Gly Arg Phe Ile Ser Phe Leu
130 135 140

Gln Glu Leu Ser Cys Phe Val Thr Arg Cys Tyr Glu Val Val Met Asn
145 150 155 160

Val Val His Gln Leu Ala Ala Leu Tyr Ile Ser Asn Lys Ile Ala Pro
165 170 175

Lys Ile Ile Glu Thr Thr Gly Val His Phe Gln Thr Met Tyr Glu His
180 185 190

Leu Gly Glu Leu Leu Thr Val Leu Leu Thr Leu Asp Glu Ile Ile Asp
195 200 205

Asn His Ile Thr Leu Lys Asp His Trp Thr Met Tyr Lys Arg Leu Leu
210 215 220

Lys Ser Val His His Asn Pro Ser Lys Phe Gly Ile Gln Glu Glu Lys
225 230 235 240

Leu Lys Pro Phe Glu Lys Phe Leu Leu Lys Leu Glu Gly Gln Leu Leu
245 250 255

Asp Gly Met Ile Phe Gln Ala Cys Ile Glu Gln Gln Phe Asp Ser Leu
260 265 270

Asn Gly Gly Val Ser Val Ser Lys Asn Ser Thr Phe Ala Glu Glu Phe
275 280 285

Ala His Ser Ile Arg Ser Ile Phe Ala Asn Val Glu Ala Lys Leu Gly
290 295 300

Glu Pro Ser Glu Ile Asp Gln Arg Asp Lys Tyr Val Gly Ile Cys Gly
305 310 315 320

Leu Phe Val Leu His Phe Gln Ile Phe Arg Thr Ile Asp Lys Lys Phe
325 330 335

Tyr Lys Ser Leu Leu Asp
340

<210> 242

<211> 246

<212> PRT

<213> Shigella Flexneri

<400> 242

Thr Pro Arg Arg Ser Asp Ser Ala Ile Ser Val Arg Ser Leu His Ser
1 5 10 15

Glu Ser Ser Met Ser Leu Arg Ser Thr Phe Ser Leu Pro Glu Glu Glu
20 25 30

Glu Glu Pro Glu Pro Leu Val Phe Ala Glu Gln Pro Ser Val Lys Leu
35 40 45

Cys Cys Gln Leu Cys Cys Ser Val Phe Lys Asp Pro Val Ile Thr Thr
50 55 60

Cys Gly His Thr Phe Cys Arg Arg Cys Ala Leu Lys Ser Glu Lys Cys
65 70 75 80

Pro Val Asp Asn Val Lys Leu Thr Val Val Val Asn Asn Ile Ala Val
85 90 95

Ala Glu Gln Ile Gly Glu Leu Phe Ile His Cys Arg His Gly Cys Arg
100 105 110

Val Ala Gly Ser Gly Lys Pro Pro Ile Phe Glu Val Asp Pro Arg Gly
115 120 125

Cys Pro Phe Thr Ile Lys Leu Ser Ala Arg Lys Asp His Glu Gly Ser
130 135 140

Cys Asp Tyr Arg Pro Val Arg Cys Pro Asn Asn Pro Ser Cys Pro Pro
145 150 155 160

Leu Leu Arg Met Asn Leu Glu Ala His Leu Lys Glu Cys Glu His Ile
165 170 175

Lys Cys Pro His Ser Lys Tyr Gly Cys Thr Phe Ile Gly Asn Gln Asp
180 185 190

Thr Tyr Glu Thr His Leu Glu Thr Cys Arg Phe Glu Gly Leu Lys Glu
195 200 205

Phe Leu Gln Gln Thr Asp Asp Arg Phe His Glu Met His Val Ala Leu
210 215 220

Ala Gln Lys Asp Gln Glu Ile Ala Phe Leu Arg Ser Met Leu Gly Lys
225 230 235 240

Leu Ser Glu Lys Ile Asp
245

<210> 243

<211> 45

<212> PRT

<213> Shigella Flexneri

<400> 243

Arg Lys Leu His Glu Leu Thr Val Met Gln Asp Arg Arg Glu Gln Ala
1 5 10 15

Arg Gln Asp Leu Lys Gly Leu Glu Glu Thr Val Ala Lys Glu Leu Gln
20 25 30

Thr Leu His Asn Leu Arg Lys Leu Phe Val Gln Asp Leu
35 40 45

<210> 244

<211> 379

<212> PRT

<213> Shigella Flexneri

<400> 244

Met Glu Glu Tyr Glu Lys Phe Cys Glu Lys Ser Leu Ala Arg Ile Gln
1 5 10 15

Glu Ala Ser Leu Ser Thr Glu Ser Phe Leu Pro Ala Gln Ser Glu Ser
20 25 30

Ile Ser Leu Ile Arg Phe His Gly Val Ala Ile Leu Ser Pro Leu Leu
35 40 45

Asn Ile Glu Lys Arg Lys Glu Met Gln Gln Glu Lys Gln Lys Ala Leu
50 55 60

Asp Val Glu Ala Arg Lys Gln Val Asn Arg Lys Lys Ala Leu Leu Thr
65 70 75 80

Arg Val Gln Glu Ile Leu Asp Asn Val Gln Val Arg Lys Ala Pro Asn
85 90 95

Ala Ser Asp Phe Asp Gln Trp Glu Met Glu Thr Val Tyr Ser Asn Ser
100 105 110

Glu Val Arg Asn Leu Asn Val Pro Ala Thr Phe Pro Asn Ser Phe Pro
115 120 125

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Ser His Thr Glu His Ser Thr Ala Ala Lys Leu Asp Lys Ile Ala Gly
    130                 135                 140

Ile Leu Pro Leu Asp Asn Glu Asp Gln Cys Lys Thr Asp Gly Ile Asp
145                 150                 155                 160

Leu Ala Arg Asp Ser Glu Gly Phe Asn Ser Pro Lys Gln Cys Asp Ser
                165                 170                 175

Ser Asn Ile Ser His Val Glu Asn Glu Ala Phe Pro Lys Thr Ser Ser
            180                 185                 190

Ala Thr Pro Gln Glu Thr Leu Ile Ser Asp Gly Pro Phe Ser Val Asn
        195                 200                 205

Glu Gln Gln Asp Leu Pro Leu Leu Ala Glu Val Ile Pro Asp Pro Tyr
    210                 215                 220

Val Met Ser Leu Gln Asn Leu Met Lys Lys Ser Lys Glu Tyr Ile Glu
225                 230                 235                 240

Arg Glu Gln Ser Arg Arg Ser Leu Arg Gly Ser Met Asn Arg Ile Val
                245                 250                 255

Asn Glu Ser His Leu Asp Lys Glu His Asp Ala Val Glu Val Ala Asp
            260                 265                 270

Cys Val Lys Glu Lys Gly Gln Leu Thr Gly Lys His Cys Val Ser Val
        275                 280                 285

Ile Pro Asp Lys Pro Ser Leu Asn Lys Ser Asn Val Leu Leu Gln Gly
    290                 295                 300

Ala Ser Thr Gln Ala Ser Ser Met Ser Met Pro Val Leu Ala Ser Phe
305                 310                 315                 320

Ser Lys Val Asp Ile Pro Ile Arg Thr Gly His Pro Thr Val Leu Glu
                325                 330                 335

Ser Asn Ser Asp Phe Lys Val Ile Pro Thr Ile Val Thr Glu Asn Asn
            340                 345                 350
```

Val Ile Lys Ser Leu Thr Gly Ser Tyr Ala Lys Leu Pro Ser Pro Glu
355 360 365

Pro Ser Met Ser Pro Lys Met His Arg Arg Arg
370 375

<210> 245

<211> 266

<212> PRT

<213> Shigella Flexneri

<400> 245

Asp Ser Pro Thr Ser Gly Arg Pro Gly Val Thr Ser Leu Thr Thr Ala
1 5 10 15

Ala Ala Phe Lys Pro Val Gly Ser Thr Gly Val Ile Lys Ser Pro Ser
20 25 30

Trp Gln Arg Pro Asn Gln Gly Val Pro Ser Thr Gly Arg Ile Ser Asn
35 40 45

Ser Ala Thr Tyr Ser Gly Ser Val Ala Pro Ala Asn Ser Ala Leu Gly
50 55 60

Gln Thr Gln Pro Ser Asp Gln Asp Thr Leu Val Gln Arg Ala Glu His
65 70 75 80

Ile Pro Ala Gly Lys Arg Thr Pro Met Cys Ala His Cys Asn Gln Val
85 90 95

Ile Arg Gly Pro Phe Leu Val Ala Leu Gly Lys Ser Trp His Pro Glu
100 105 110

Glu Phe Asn Cys Ala His Cys Lys Asn Thr Met Ala Tyr Ile Gly Phe
115 120 125

Val Glu Glu Lys Gly Ala Leu Tyr Cys Glu Leu Cys Tyr Glu Lys Phe
130 135 140

Phe Ala Pro Glu Cys Gly Arg Cys Gln Arg Lys Ile Leu Gly Glu Val
145 150 155 160

Ile Asn Ala Leu Lys Gln Thr Trp His Val Ser Cys Phe Val Cys Val
165 170 175

Ala Cys Gly Lys Pro Ile Arg Asn Asn Val Phe His Leu Glu Asp Gly
180 185 190

Glu Pro Tyr Cys Glu Thr Asp Tyr Tyr Ala Leu Phe Gly Thr Ile Cys
195 200 205

His Gly Cys Glu Phe Pro Ile Glu Ala Gly Asp Met Phe Leu Glu Ala
210 215 220

Leu Gly Tyr Thr Trp His Asp Thr Cys Phe Val Cys Ser Val Cys Cys
225 230 235 240

Glu Ser Leu Glu Gly Gln Thr Phe Phe Ser Lys Lys Asp Lys Pro Leu
245 250 255

Cys Lys Lys His Ala His Ser Val Asn Phe
260 265

<210> 246

<211> 237

<212> PRT

<213> Shigella Flexneri

<400> 246

Phe Tyr Arg Arg His Thr Pro Tyr Met Val Gln Pro Glu Tyr Arg Ile
1 5 10 15

Tyr Glu Met Asn Lys Arg Leu Gln Ser Arg Thr Glu Asp Ser Asp Asn
20 25 30

Leu Trp Trp Asp Ala Phe Ala Thr Glu Phe Phe Glu Asp Asp Ala Thr
35 40 45

Leu Thr Leu Ser Phe Cys Leu Glu Asp Gly Pro Lys Arg Tyr Thr Ile

50 55 60

Gly Arg Thr Leu Ile Pro Arg Tyr Phe Ser Thr Val Phe Glu Gly Gly
65 70 75 80

Val Thr Asp Leu Tyr Tyr Ile Leu Lys His Ser Lys Glu Ser Tyr His
85 90 95

Asn Ser Ser Ile Thr Val Asp Cys Asp Gln Cys Thr Met Val Thr Gln
100 105 110

His Gly Lys Pro Met Phe Thr Lys Val Cys Thr Glu Gly Arg Leu Ile
115 120 125

Leu Glu Phe Thr Phe Asp Asp Leu Met Arg Ile Lys Thr Trp His Phe
130 135 140

Thr Ile Arg Gln Tyr Arg Glu Leu Val Pro Arg Ser Ile Leu Ala Met
145 150 155 160

His Ala Gln Asp Pro Gln Val Leu Asp Gln Leu Ser Lys Asn Ile Thr
165 170 175

Arg Met Gly Leu Thr Asn Phe Thr Leu Asn Tyr Leu Arg Leu Cys Val
180 185 190

Ile Leu Glu Pro Met Gln Glu Leu Met Ser Arg His Lys Thr Tyr Asn
195 200 205

Leu Ser Pro Arg Asp Cys Leu Lys Thr Cys Leu Phe Gln Lys Trp Gln
210 215 220

Arg Met Val Ala Pro Pro Ala Glu Pro Thr Arg Gln Pro
225 230 235

<210> 247

<211> 227

<212> PRT

<213> Shigella Flexneri

<400> 247

```
Met Leu Asp Arg Asp Val Gly Pro Thr Pro Met Tyr Pro Pro Thr Tyr
1               5                  10                  15

Leu Glu Pro Gly Ile Gly Arg His Thr Pro Tyr Gly Asn Gln Thr Asp
            20                  25                  30

Tyr Arg Ile Phe Glu Leu Asn Lys Arg Leu Gln Asn Trp Thr Glu Glu
        35                  40                  45

Cys Asp Asn Leu Trp Trp Asp Ala Phe Thr Thr Glu Phe Phe Glu Asp
    50                  55                  60

Asp Ala Met Leu Thr Ile Thr Phe Cys Leu Glu Asp Gly Pro Lys Arg
65                  70                  75                  80

Tyr Thr Ile Gly Arg Thr Leu Ile Pro Arg Tyr Phe Arg Ser Ile Phe
                85                  90                  95

Glu Gly Gly Ala Thr Glu Leu Tyr Tyr Val Leu Lys His Pro Lys Glu
            100                 105                 110

Ala Phe His Ser Asn Phe Val Ser Leu Asp Cys Asp Gln Gly Ser Met
        115                 120                 125

Val Thr Gln His Gly Lys Pro Met Phe Thr Gln Val Cys Val Glu Gly
    130                 135                 140

Arg Leu Tyr Leu Glu Phe Met Phe Asp Asp Met Met Arg Ile Lys Thr
145                 150                 155                 160

Trp His Phe Ser Ile Arg Gln His Arg Glu Leu Ile Pro Arg Ser Ile
                165                 170                 175

Leu Ala Met His Ala Gln Asp Pro Gln Met Leu Asp Gln Leu Ser Lys
            180                 185                 190

Asn Ile Thr Arg Cys Gly Leu Ser Asn Ser Thr Leu Asn Tyr Leu Arg
        195                 200                 205

Leu Cys Val Ile Leu Glu Pro Met Gln Glu Leu Met Ser Arg His Lys
    210                 215                 220
```

Thr Tyr Ser
225

<210> 248

<211> 302

<212> PRT

<213> Shigella Flexneri

<400> 248

Val Thr Ala Ser Thr Thr Cys Glu Lys Leu Glu Lys Ala Arg Asn Glu
1 5 10 15

Leu Gln Thr Val Tyr Glu Ala Phe Val Gln Gln His Gln Ala Glu Lys
20 25 30

Thr Glu Arg Glu Asn Arg Leu Lys Glu Phe Tyr Thr Arg Glu Tyr Glu
35 40 45

Lys Leu Arg Asp Thr Tyr Ile Glu Glu Ala Glu Lys Tyr Lys Met Gln
50 55 60

Leu Gln Glu Gln Phe Asp Asn Leu Asn Ala Ala His Glu Thr Ser Lys
65 70 75 80

Leu Glu Ile Glu Ala Ser His Ser Glu Lys Leu Glu Leu Leu Lys Lys
85 90 95

Ala Tyr Glu Ala Ser Leu Ser Glu Ile Lys Lys Gly His Glu Ile Glu
100 105 110

Lys Lys Ser Leu Glu Asp Leu Leu Ser Glu Lys Gln Glu Ser Leu Glu
115 120 125

Lys Gln Ile Asn Asp Leu Lys Ser Glu Asn Asp Ala Leu Asn Glu Lys
130 135 140

Leu Lys Ser Glu Glu Gln Lys Arg Arg Ala Arg Glu Lys Ala Asn Leu
145 150 155 160

Lys Asn Pro Gln Ile Met Tyr Leu Glu Gln Glu Leu Glu Ser Leu Lys
165 170 175

Ala Val Leu Glu Ile Lys Asn Glu Lys Leu His Gln Gln Asp Ile Lys
180 185 190

Leu Met Lys Met Glu Lys Leu Val Asp Asn Asn Thr Ala Leu Val Asp
195 200 205

Lys Leu Lys Arg Phe Gln Gln Glu Asn Glu Glu Leu Lys Ala Arg Met
210 215 220

Asp Lys His Met Ala Ile Ser Arg Gln Leu Ser Thr Glu Gln Ala Val
225 230 235 240

Leu Gln Glu Ser Leu Glu Lys Glu Ser Lys Val Asn Lys Arg Leu Ser
245 250 255

Met Glu Asn Glu Glu Leu Leu Trp Lys Leu His Asn Gly Asp Leu Cys
260 265 270

Ser Pro Lys Arg Ser Pro Thr Ser Ser Ala Ile Pro Leu Gln Ser Pro
275 280 285

Arg Asn Ser Gly Ser Phe Pro Ser Pro Ser Ile Ser Pro Arg
290 295 300

<210> 249

<211> 376

<212> PRT

<213> Shigella Flexneri

<400> 249

Ser Leu Pro Pro Ser Thr Gly Thr Phe Gln Glu Ala Gln Ser Arg Leu
1 5 10 15

Asn Glu Ala Ala Ala Gly Leu Asn Gln Ala Ala Thr Glu Leu Val Gln
20 25 30

Ala Ser Arg Gly Thr Pro Gln Asp Leu Ala Arg Ala Ser Gly Arg Phe

35 40 45

Gly Gln Asp Phe Ser Thr Phe Leu Glu Ala Gly Val Glu Met Ala Gly
50 55 60

Gln Ala Pro Ser Gln Glu Asp Arg Ala Gln Val Val Ser Asn Leu Lys
65 70 75 80

Gly Ile Ser Met Ser Ser Ser Lys Leu Leu Leu Ala Ala Lys Ala Leu
85 90 95

Ser Thr Asp Pro Ala Ala Pro Asn Leu Lys Ser Gln Leu Ala Ala Ala
100 105 110

Ala Arg Ala Val Thr Asp Ser Ile Asn Gln Leu Ile Thr Met Cys Thr
115 120 125

Gln Gln Ala Pro Gly Gln Lys Glu Cys Asp Asn Ala Leu Arg Glu Leu
130 135 140

Glu Thr Val Arg Glu Leu Leu Glu Asn Pro Val Gln Pro Ile Asn Asp
145 150 155 160

Met Ser Tyr Phe Gly Cys Leu Asp Ser Val Met Glu Asn Ser Lys Val
165 170 175

Leu Gly Glu Ala Met Thr Gly Ile Ser Gln Asn Ala Lys Asn Gly Asn
180 185 190

Leu Pro Glu Phe Gly Asp Ala Ile Ser Thr Ala Ser Lys Ala Leu Cys
195 200 205

Gly Phe Thr Glu Ala Ala Ala Gln Ala Ala Tyr Leu Val Gly Val Ser
210 215 220

Asp Pro Asn Ser Gln Ala Gly Gln Gln Gly Leu Val Glu Pro Thr Gln
225 230 235 240

Phe Ala Arg Ala Asn Gln Ala Ile Gln Met Ala Cys Gln Ser Leu Gly
245 250 255

Glu Pro Gly Cys Thr Gln Ala Gln Val Leu Ser Ala Ala Thr Ile Val
260 265 270

Ala Lys His Thr Ser Ala Leu Cys Asn Ser Cys Arg Leu Ala Ser Ala
275 280 285

Arg Thr Thr Asn Pro Thr Ala Lys Arg Gln Phe Val Gln Ser Ala Lys
290 295 300

Glu Val Ala Asn Ser Thr Ala Asn Leu Val Lys Thr Ile Lys Ala Leu
305 310 315 320

Asp Gly Ala Phe Thr Glu Glu Asn Arg Ala Gln Cys Arg Ala Ala Thr
325 330 335

Ala Pro Leu Leu Glu Ala Val Asp Asn Leu Ser Ala Phe Ala Ser Asn
340 345 350

Pro Glu Phe Ser Ser Ile Pro Ala Gln Ile Ser Pro Glu Gly Arg Ala
355 360 365

Ala Met Glu Pro Ile Val Ile Ser
370 375

<210> 250

<211> 99

<212> PRT

<213> Shigella Flexneri

<400> 250

Glu Asp Leu Gln Pro Pro Ser Ala Leu Ser Ala Pro Phe Thr Asn Ser
1 5 10 15

Leu Ala Arg Ser Ala Arg Gln Ser Val Leu Arg Tyr Ser Thr Leu Pro
20 25 30

Gly Arg Arg Ala Leu Lys Asn Ser Arg Leu Val Ser Gln Lys Asp Asp
35 40 45

Val His Val Cys Ile Leu Cys Leu Arg Ala Ile Met Asn Tyr Gln Tyr
50 55 60

Gly Phe Asn Leu Val Met Ser His Pro His Ala Val Asn Glu Ile Ala
65 70 75 80

Leu Ser Leu Asn Asn Lys Asn Pro Arg Thr Lys Ala Leu Val Leu Glu
85 90 95

Leu Leu Ala

<210> 251

<211> 228

<212> PRT

<213> Shigella Flexneri

<400> 251

Lys Arg His Glu Arg Met Ile Lys Asn Arg Glu Ser Ala Cys Gln Ser
1 5 10 15

Arg Arg Lys Lys Lys Glu Tyr Leu Gln Gly Leu Glu Ala Arg Leu Gln
20 25 30

Ala Val Leu Ala Asp Asn Gln Gln Leu Arg Arg Glu Asn Ala Ala Leu
35 40 45

Arg Arg Arg Leu Glu Ala Leu Leu Ala Glu Asn Ser Glu Leu Lys Leu
50 55 60

Gly Ser Gly Asn Arg Lys Val Val Cys Ile Met Val Phe Leu Leu Phe
65 70 75 80

Ile Ala Phe Asn Phe Gly Pro Val Ser Ile Ser Glu Pro Pro Ser Ala
85 90 95

Pro Ile Ser Pro Arg Met Asn Lys Gly Glu Pro Gln Pro Arg Arg His
100 105 110

Leu Leu Gly Phe Ser Glu Gln Glu Pro Val Gln Gly Val Glu Pro Leu
115 120 125

Gln Gly Ser Ser Gln Gly Pro Lys Glu Pro Gln Pro Ser Pro Thr Asp
130 135 140

Gln Pro Ser Phe Ser Asn Leu Thr Ala Phe Pro Gly Gly Ala Lys Glu
145 150 155 160

Leu Leu Leu Arg Asp Leu Asp Gln Leu Phe Leu Ser Ser Asp Cys Arg
165 170 175

His Phe Asn Arg Thr Glu Ser Leu Arg Leu Ala Asp Glu Leu Ser Gly
180 185 190

Trp Val Gln Arg His Gln Arg Gly Arg Arg Lys Ile Pro Gln Arg Ala
195 200 205

Gln Glu Arg Gln Lys Ser Gln Pro Arg Lys Lys Ser Pro Pro Val Lys
210 215 220

Ala Val Pro Ile
225

<210> 252

<211> 229

<212> PRT

<213> Shigella Flexneri

<400> 252

Glu Ser Glu Val Ser Glu His Leu Ser Ala Ser Ser Ala Ser Ala Ile
1 5 10 15

Gln Gln Asp Ser Thr Ser Ser Met Gln Pro Pro Ser Glu Ala Pro Met
20 25 30

Val Asn Thr Val Ser Ser Ala Tyr Ser Glu Asp Phe Glu Asn Ser Pro
35 40 45

Ser Leu Thr Ala Ser Glu Pro Thr Ala His Ser Lys Glu Ser Leu Asp
50 55 60

Arg Thr Leu Asp Ala Leu Ser Glu Ser Ser Ser Ser Val Lys Thr Asp

65 70 75 80

Leu Pro Gln Thr Ala Glu Ser Arg Lys Lys Ser Gly Arg His Val Thr
85 90 95

Arg Val Leu Val Lys Asp Thr Ala Val Gln Thr Pro Asp Pro Ala Phe
100 105 110

Thr Tyr Glu Trp Thr Lys Val Ala Ser Met Ala Ala Met Gly Pro Ala
115 120 125

Leu Gly Gly Ala Tyr Val Asp Pro Thr Pro Ile Ala Asn His Val Ile
130 135 140

Ser Ala Asp Ala Ile Glu Ala Leu Thr Ala Tyr Ser Pro Ala Val Leu
145 150 155 160

Ala Leu His Asp Val Leu Lys Gln Gln Leu Ser Leu Thr Gln Gln Phe
165 170 175

Ile Gln Ala Ser Arg His Leu His Ala Ser Leu Leu Arg Ser Leu Asp
180 185 190

Ala Asp Ser Phe His Tyr His Thr Leu Glu Glu Ala Lys Glu Tyr Ile
195 200 205

Arg Cys His Arg Pro Ala Pro Leu Thr Met Glu Asp Ala Leu Glu Glu
210 215 220

Val Asn Lys Glu Leu
225

<210> 253

<211> 151

<212> PRT

<213> Shigella Flexneri

<400> 253

Met Ala Glu Ser Arg Gln Asp Leu Glu Glu Glu Tyr Glu Pro Gln Phe
1 5 10 15

Leu Arg Leu Leu Glu Arg Lys Glu Ala Gly Thr Lys Ala Leu Gln Arg
20 25 30

Thr Gln Ala Glu Ile Gln Glu Met Lys Glu Ala Leu Arg Pro Leu Gln
35 40 45

Ala Glu Ala Arg Gln Leu Arg Leu Gln Asn Arg Asn Leu Glu Asp Gln
50 55 60

Ile Ala Leu Val Arg Gln Lys Arg Asp Glu Glu Val Gln Gln Tyr Arg
65 70 75 80

Glu Gln Leu Glu Glu Met Glu Glu Arg Gln Arg Gln Leu Arg Asn Gly
85 90 95

Val Gln Leu Gln Gln Gln Lys Asn Lys Glu Met Glu Gln Leu Arg Leu
100 105 110

Ser Leu Ala Glu Glu Leu Ser Thr Tyr Lys Ala Met Leu Leu Pro Lys
115 120 125

Ser Leu Glu Gln Ala Asp Ala Pro Thr Ser Gln Ala Gly Gly Met Glu
130 135 140

Thr Gln Ser Gln Gly Ala Val
145 150

<210> 254

<211> 264

<212> PRT

<213> Shigella Flexneri

<400> 254

Trp Val Ile Pro Asp Pro Glu Glu Glu Pro Glu Arg Lys Arg Lys Lys
1 5 10 15

Gly Pro Ala Pro Lys Met Leu Gly His Glu Leu Cys Arg Val Cys Gly
20 25 30

Asp Lys Ala Ser Gly Phe His Tyr Asn Val Leu Ser Cys Glu Gly Cys
35 40 45

Lys Gly Phe Phe Arg Arg Ser Val Val Arg Gly Gly Ala Arg Arg Tyr
50 55 60

Ala Cys Arg Gly Gly Gly Thr Cys Gln Met Asp Ala Phe Met Arg Arg
65 70 75 80

Lys Cys Gln Gln Cys Arg Leu Arg Lys Cys Lys Glu Ala Gly Met Arg
85 90 95

Glu Gln Cys Val Leu Ser Glu Glu Gln Ile Arg Lys Lys Lys Ile Arg
100 105 110

Lys Gln Gln Gln Gln Glu Ser Gln Ser Gln Ser Gln Ser Pro Val Gly
115 120 125

Pro Gln Gly Ser Ser Ser Ser Ala Ser Gly Pro Gly Ala Ser Pro Gly
130 135 140

Gly Ser Glu Ala Gly Ser Gln Gly Ser Gly Glu Gly Glu Gly Val Gln
145 150 155 160

Leu Thr Ala Ala Gln Glu Leu Met Ile Gln Gln Leu Val Ala Ala Gln
165 170 175

Leu Gln Cys Asn Lys Arg Ser Phe Ser Asp Gln Pro Lys Val Thr Pro
180 185 190

Trp Pro Leu Gly Ala Asp Pro Gln Ser Arg Asp Ala Arg Gln Gln Arg
195 200 205

Phe Ala His Phe Thr Glu Leu Ala Ile Ile Ser Val Gln Glu Ile Val
210 215 220

Asp Phe Ala Lys Gln Val Pro Gly Phe Leu Gln Leu Gly Arg Glu Asp
225 230 235 240

Gln Ile Ala Leu Leu Lys Ala Ser Thr Ile Glu Ile Met Leu Leu Glu
245 250 255

Thr Ala Arg Arg Tyr Asn His Glu
260

<210> 255

<211> 130

<212> PRT

<213> Shigella Flexneri

<400> 255

Met Lys Asp Glu Pro Arg Ser Thr Asn Leu Phe Met Lys Leu Asp Ser
1 5 10 15

Val Phe Ile Trp Lys Glu Pro Phe Gly Leu Val Leu Ile Ile Ala Pro
20 25 30

Trp Asn Tyr Pro Leu Asn Leu Thr Leu Val Leu Leu Val Gly Thr Leu
35 40 45

Pro Ala Gly Asn Cys Val Val Leu Lys Pro Ser Glu Ile Ser Gln Gly
50 55 60

Thr Glu Lys Val Leu Ala Glu Val Leu Pro Gln Tyr Leu Asp Gln Ser
65 70 75 80

Cys Phe Ala Val Val Leu Gly Gly Pro Gln Glu Thr Gly Gln Leu Leu
85 90 95

Glu His Lys Leu Asp Tyr Ile Phe Phe Thr Gly Ser Pro Arg Val Gly
100 105 110

Lys Ile Val Met Thr Ala Ala Thr Lys His Leu Thr Pro Val Thr Leu
115 120 125

Glu Leu
130

<210> 256

<211> 115

<212> PRT

<213> Shigella Flexneri

<400> 256

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Leu Gly Ile Ala Leu Ala Leu Leu Gly Glu Arg Leu Leu Ala Leu Arg
1               5                  10                  15

Asn Arg Leu Lys Ala Ser Arg Glu Val Glu Ser Val Asp Leu Pro His
            20                  25                  30

Cys His Leu Ile Lys Gly Ile Glu Ala Gly Ser Glu Asp Ile Asp Ile
        35                  40                  45

Leu Pro Asn Gly Leu Ala Phe Phe Ser Val Gly Leu Lys Phe Pro Gly
    50                  55                  60

Leu His Ser Phe Ala Pro Asp Lys Pro Gly Gly Ile Leu Met Met Asp
65                  70                  75                  80

Leu Lys Glu Glu Lys Pro Arg Ala Arg Glu Leu Arg Ile Ser Arg Gly
                85                  90                  95

Phe Asp Leu Ala Ser Phe Asn Pro His Gly Ile Ser Thr Phe Ile Asp
            100                 105                 110

Asn Asp Asp
        115
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<210> 257

<211> 65

<212> PRT

<213> Shigella Flexneri

<220>

<221> MISC_FEATURE

<222> (1)..(44)

<223> MISC_FEATURE

<220>

<221> MISC_FEATURE

<222> (61)..(61)

<223> MISC_FEATURE

<400> 257

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
20 25 30

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Val Leu Asn Leu
35 40 45

Cys Ser Pro Asp Pro Phe Thr Leu Ile Lys Ile Ile Xaa Gly Leu Gln
50 55 60

Ile
65

<210> 258

<211> 11

<212> PRT

<213> Shigella Flexneri

<400> 258

Tyr Tyr Leu Leu Asp Val Ser Val Gly Ile Val
1 5 10

<210> 259

<211> 276

<212> PRT

<213> Shigella Flexneri

<400> 259

Phe Asp Gln Pro Gln Glu Tyr Phe Met Glu Leu Thr Phe Asn Gln Ala
1 5 10 15

Ala Lys Gly Val Asn Lys Glu Phe Thr Val Asn Ile Met Asp Thr Cys
20 25 30

Glu Arg Cys Asn Gly Lys Gly Asn Glu Pro Gly Thr Lys Val Gln His
35 40 45

Cys His Tyr Cys Gly Gly Ser Gly Met Glu Thr Ile Asn Thr Gly Pro
50 55 60

Phe Val Met Arg Ser Thr Cys Arg Arg Cys Gly Gly Arg Gly Ser Ile
65 70 75 80

Ile Ile Ser Pro Cys Val Val Cys Arg Gly Ala Gly Gln Ala Lys Gln
85 90 95

Lys Lys Arg Val Met Ile Pro Val Pro Ala Gly Val Glu Asp Gly Gln
100 105 110

Thr Val Arg Met Pro Val Gly Lys Arg Glu Ile Phe Ile Thr Phe Arg
115 120 125

Val Gln Lys Ser Pro Val Phe Arg Arg Asp Gly Ala Asp Ile His Ser
130 135 140

Asp Leu Phe Ile Ser Ile Ala Gln Ala Leu Leu Gly Gly Thr Ala Arg
145 150 155 160

Ala Gln Gly Leu Tyr Glu Thr Ile Asn Val Thr Ile Pro Pro Gly Thr
165 170 175

Gln Thr Asp Gln Lys Ile Arg Met Gly Gly Lys Gly Ile Pro Arg Ile
180 185 190

Asn Ser Tyr Gly Tyr Gly Asp His Tyr Ile His Ile Lys Ile Arg Val
195 200 205

Pro Lys Arg Leu Thr Ser Arg Gln Gln Ser Leu Ile Leu Ser Tyr Ala
210 215 220

Glu Asp Glu Thr Asp Val Glu Gly Thr Val Asn Gly Val Thr Leu Thr
225 230 235 240

Ser Ser Gly Gly Ser Thr Met Asp Ser Ser Ala Gly Ser Lys Ala Arg
245 250 255

Arg Glu Ala Gly Glu Asp Glu Glu Gly Phe Leu Ser Lys Leu Lys Lys
260 265 270

Met Phe Thr Ser
275

<210> 260

<211> 785

<212> PRT

<213> Shigella Flexneri

<400> 260

Met Ala Asp Leu Asp Ser Pro Pro Lys Leu Ser Gly Val Gln Gln Pro
1 5 10 15

Ser Glu Gly Val Gly Gly Gly Arg Cys Ser Glu Ile Ser Ala Glu Leu
20 25 30

Ile Arg Ser Leu Thr Glu Leu Gln Glu Leu Glu Ala Val Tyr Glu Arg
35 40 45

Leu Cys Gly Glu Glu Lys Val Val Glu Arg Glu Leu Asp Ala Leu Leu
50 55 60

Glu Gln Gln Asn Thr Ile Glu Ser Lys Met Val Thr Leu His Arg Met
65 70 75 80

Gly Pro Asn Leu Gln Leu Ile Glu Gly Asp Ala Lys Gln Leu Ala Gly
85 90 95

Met Ile Thr Phe Thr Cys Asn Leu Ala Glu Asn Val Ser Ser Lys Val

```
            100                 105                 110

Arg Gln Leu Asp Leu Ala Lys Asn Arg Leu Tyr Gln Ala Ile Gln Arg
        115                 120                 125

Ala Asp Asp Ile Leu Asp Leu Lys Phe Cys Met Asp Gly Val Gln Thr
    130                 135                 140

Ala Leu Arg Ser Glu Asp Tyr Glu Gln Ala Ala Ala His Ile His Arg
145                 150                 155                 160

Tyr Leu Cys Leu Asp Lys Ser Val Ile Glu Leu Ser Arg Gln Gly Lys
                165                 170                 175

Gly Gly Ser Met Ile Asp Ala Asn Leu Lys Leu Leu Gln Glu Ala Glu
            180                 185                 190

Gln Arg Leu Lys Ala Ile Val Ala Glu Lys Phe Ala Ile Ala Thr Lys
        195                 200                 205

Glu Gly Asp Leu Pro Gln Val Glu Arg Phe Phe Lys Ile Phe Pro Leu
    210                 215                 220

Leu Gly Leu His Glu Glu Gly Leu Arg Arg Phe Ser Glu Tyr Leu Cys
225                 230                 235                 240

Lys Gln Val Ala Ser Lys Ala Glu Glu Asn Leu Leu Met Val Leu Gly
                245                 250                 255

Thr Asp Met Ser Asp Arg Arg Ala Ala Val Ile Phe Ala Asp Thr Leu
            260                 265                 270

Thr Leu Leu Phe Glu Gly Ile Ala Arg Ile Val Glu Ala His Gln Pro
        275                 280                 285

Ile Val Glu Thr Tyr Tyr Gly Pro Gly Arg Leu Tyr Thr Leu Ile Lys
    290                 295                 300

Tyr Leu Gln Val Glu Cys Asp Arg Gln Val Glu Lys Val Val Asp Lys
305                 310                 315                 320

Phe Ile Lys Gln Arg Asp Tyr His Gln Gln Phe Arg His Val Gln Asn
                325                 330                 335
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Asn Leu Met Arg Asn Ser Thr Thr Glu Lys Ile Glu Pro Arg Glu Leu
340 345 350

Asp Pro Ile Leu Thr Glu Val Thr Leu Met Asn Ala Arg Ser Glu Leu
355 360 365

Tyr Leu Arg Phe Leu Lys Lys Arg Ile Ser Ser Asp Phe Glu Val Gly
370 375 380

Asp Ser Met Ala Ser Glu Glu Val Lys Gln Glu His Gln Lys Cys Leu
385 390 395 400

Asp Lys Leu Leu Asn Asn Cys Leu Leu Ser Cys Thr Met Gln Glu Leu
405 410 415

Ile Gly Leu Tyr Val Thr Met Glu Glu Tyr Phe Met Arg Glu Thr Val
420 425 430

Asn Lys Ala Val Ala Leu Asp Thr Tyr Glu Lys Gly Gln Leu Thr Ser
435 440 445

Ser Met Val Asp Asp Val Phe Tyr Ile Val Lys Lys Cys Ile Gly Arg
450 455 460

Ala Leu Ser Ser Ser Ser Ile Asp Cys Leu Cys Ala Met Ile Asn Leu
465 470 475 480

Ala Thr Thr Glu Leu Glu Ser Asp Phe Arg Asp Val Leu Cys Asn Lys
485 490 495

Leu Arg Met Gly Phe Pro Ala Thr Thr Phe Gln Asp Ile Gln Arg Gly
500 505 510

Val Thr Ser Ala Val Asn Ile Met His Ser Ser Leu Gln Gln Gly Lys
515 520 525

Phe Asp Thr Lys Gly Ile Glu Ser Thr Asp Glu Ala Lys Met Ser Phe
530 535 540

Leu Val Thr Leu Asn Asn Val Glu Val Cys Ser Glu Asn Ile Ser Thr
545 550 555 560

Leu Lys Lys Thr Leu Glu Ser Asp Cys Thr Lys Leu Phe Ser Gln Gly
565 570 575

Ile Gly Gly Glu Gln Ala Gln Ala Lys Phe Asp Gly Cys Leu Ser Asp
580 585 590

Leu Ala Ala Val Ser Asn Lys Phe Arg Asp Leu Leu Gln Glu Gly Leu
595 600 605

Thr Glu Leu Asn Ser Thr Ala Ile Lys Pro Gln Val Gln Pro Trp Ile
610 615 620

Asn Ser Phe Phe Ser Val Ser His Asn Ile Glu Glu Glu Glu Phe Asn
625 630 635 640

Asp Tyr Glu Ala Asn Asp Pro Trp Val Gln Gln Phe Ile Leu Asn Leu
645 650 655

Glu Gln Gln Met Ala Glu Phe Lys Ala Ser Leu Ser Pro Val Ile Tyr
660 665 670

Asp Ser Leu Thr Gly Leu Met Thr Ser Leu Val Ala Val Glu Leu Glu
675 680 685

Lys Val Val Leu Lys Ser Thr Phe Asn Arg Leu Gly Gly Leu Gln Phe
690 695 700

Asp Lys Glu Leu Arg Ser Leu Ile Ala Tyr Leu Thr Thr Val Thr Thr
705 710 715 720

Trp Thr Ile Arg Asp Lys Phe Ala Arg Leu Ser Gln Met Ala Thr Ile
725 730 735

Leu Asn Leu Glu Arg Val Thr Glu Ile Leu Asp Tyr Trp Gly Pro Asn
740 745 750

Ser Gly Pro Leu Thr Trp Arg Leu Thr Pro Ala Glu Val Arg Gln Val
755 760 765

Leu Ala Leu Arg Ile Asp Phe Arg Ser Glu Asp Ile Lys Arg Leu Arg
770 775 780

Leu
785

<210> 261

<211> 16

<212> PRT

<213> Shigella Flexneri

<400> 261

Pro Cys Leu Gly Trp Leu Ile Tyr Gln Gly Cys Leu Ser Leu Cys Leu
1 5 10 15

<210> 262

<211> 21

<212> PRT

<213> Shigella Flexneri

<220>

<221> MISC_FEATURE

<222> (1)..(1)

<223> MISC_FEATURE

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<222> (3)..(4)

<223> MISC_FEATURE

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<222> (6)..(6)

<223> MISC_FEATURE

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<222> (8)..(10)

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<222> (14)..(14)

<223> MISC_FEATURE

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<222> (19)..(19)

<223> MISC_FEATURE

<220>

<221> MISC_FEATURE

<222> (19)..(21)

<223> 21

<400> 262

Xaa Gly Xaa Xaa Arg Xaa Ser Xaa Xaa Xaa Pro Leu His Xaa Val Leu
1 5 10 15

Leu Arg Xaa Asp Xaa
20

<210> 263

<211> 722

<212> PRT

<213> Shigella Flexneri

<400> 263

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Gln Glu Leu Gln Lys Lys Ala Glu His Gln Val Gly Glu Asp Gly Phe
1               5                  10                  15

Leu Leu Lys Ile Lys Leu Gly His Tyr Ala Thr Gln Leu Gln Asn Thr
            20                  25                  30

Tyr Asp Arg Cys Pro Met Glu Leu Val Arg Cys Ile Arg His Ile Leu
        35                  40                  45

Tyr Asn Glu Gln Arg Leu Val Arg Glu Ala Asn Asn Gly Ser Ser Pro
    50                  55                  60

Ala Gly Ser Leu Ala Asp Ala Met Ser Gln Lys His Leu Gln Ile Asn
65                  70                  75                  80

Gln Thr Phe Glu Glu Leu Arg Leu Val Thr Gln Asp Thr Glu Asn Glu
                85                  90                  95

Leu Lys Lys Leu Gln Gln Thr Gln Glu Tyr Phe Ile Ile Gln Tyr Gln
            100                 105                 110

Glu Ser Leu Arg Ile Gln Ala Gln Phe Gly Pro Leu Ala Gln Leu Ser
        115                 120                 125

Pro Gln Glu Arg Leu Ser Arg Glu Thr Ala Leu Gln Gln Lys Gln Val
    130                 135                 140

Ser Leu Glu Ala Trp Leu Gln Arg Glu Ala Gln Thr Leu Gln Gln Tyr
145                 150                 155                 160

Arg Val Glu Leu Pro Glu Lys His Gln Lys Thr Leu Gln Leu Leu Arg
                165                 170                 175

Lys Gln Gln Thr Ile Ile Leu Asp Asp Glu Leu Ile Gln Trp Lys Arg
            180                 185                 190

Arg Gln Gln Leu Ala Gly Asn Gly Gly Pro Pro Glu Gly Ser Leu Asp
```

195 200 205

Val Leu Gln Ser Trp Cys Glu Lys Leu Ala Glu Ile Ile Trp Gln Asn
210 215 220

Arg Gln Gln Ile Arg Arg Ala Glu His Leu Cys Gln Gln Leu Pro Ile
225 230 235 240

Pro Gly Pro Val Glu Glu Met Leu Ala Glu Val Asn Ala Thr Ile Thr
245 250 255

Asp Ile Ile Ser Ala Leu Val Thr Ser Thr Phe Ile Ile Glu Lys Gln
260 265 270

Pro Pro Gln Val Leu Lys Thr Gln Thr Lys Phe Ala Ala Thr Val Arg
275 280 285

Leu Leu Val Gly Gly Lys Leu Asn Val His Met Asn Pro Pro Gln Val
290 295 300

Lys Ala Thr Ile Ile Ser Glu Gln Gln Ala Lys Ser Leu Leu Lys Asn
305 310 315 320

Glu Asn Thr Arg Asn Asp Tyr Ser Gly Glu Ile Leu Asn Asn Cys Cys
325 330 335

Val Met Glu Tyr His Gln Ala Thr Gly Thr Leu Ser Ala His Phe Arg
340 345 350

Asn Met Ser Leu Lys Arg Ile Lys Arg Ser Asp Arg Arg Gly Ala Glu
355 360 365

Ser Val Thr Glu Glu Lys Phe Thr Ile Leu Phe Glu Ser Gln Phe Ser
370 375 380

Val Gly Gly Asn Glu Leu Val Phe Gln Val Lys Thr Leu Ser Leu Pro
385 390 395 400

Val Val Val Ile Val His Gly Ser Gln Asp Asn Asn Ala Thr Ala Thr
405 410 415

Val Leu Trp Asp Asn Ala Phe Ala Glu Pro Gly Arg Val Pro Phe Ala
420 425 430

Val Pro Asp Lys Val Leu Trp Pro Gln Leu Cys Glu Ala Leu Asn Met
435 440 445

Lys Phe Lys Ala Glu Val Gln Ser Asn Arg Gly Leu Thr Lys Glu Asn
450 455 460

Leu Val Phe Leu Ala Gln Lys Leu Phe Asn Asn Ser Ser Ser His Leu
465 470 475 480

Glu Asp Tyr Ser Gly Leu Ser Val Ser Trp Ser Gln Phe Asn Arg Glu
485 490 495

Asn Leu Pro Gly Arg Asn Tyr Thr Phe Trp Gln Trp Phe Asp Gly Val
500 505 510

Met Glu Val Leu Lys Lys His Leu Lys Pro His Trp Asn Asp Gly Ala
515 520 525

Ile Leu Gly Phe Val Asn Lys Gln Gln Ala His Asp Leu Leu Ile Asn
530 535 540

Lys Pro Asp Gly Thr Phe Leu Leu Arg Phe Ser Asp Ser Glu Ile Gly
545 550 555 560

Gly Ile Thr Ile Ala Trp Lys Phe Asp Ser Gln Glu Arg Met Phe Trp
565 570 575

Asn Leu Met Pro Phe Thr Thr Arg Asp Phe Ser Ile Arg Ser Leu Ala
580 585 590

Asp Arg Leu Gly Asp Leu Asn Tyr Leu Ile Tyr Val Phe Pro Asp Arg
595 600 605

Pro Lys Asp Glu Val Tyr Ser Lys Tyr Tyr Thr Pro Val Pro Cys Glu
610 615 620

Ser Ala Thr Ala Lys Ala Val Asp Gly Tyr Val Lys Pro Gln Ile Lys
625 630 635 640

Gln Val Val Pro Glu Phe Val Asn Ala Ser Ala Asp Ala Gly Gly Gly
645 650 655

Ser Ala Thr Tyr Met Asp Gln Ala Pro Ser Pro Ala Val Cys Pro Gln
660 665 670

Ala His Tyr Asn Met Tyr Pro Gln Asn Pro Asp Ser Val Leu Asp Thr
675 680 685

Asp Gly Asp Phe Asp Leu Glu Asp Thr Met Asp Val Ala Arg Arg Val
690 695 700

Glu Glu Leu Leu Gly Arg Pro Met Asp Ser Gln Trp Ile Pro His Ala
705 710 715 720

Gln Ser

<210> 264

<211> 500

<212> PRT

<213> Shigella Flexneri

<400> 264

Met Gly Ile Gly Leu Ser Ala Gln Gly Val Asn Met Asn Arg Leu Pro
1 5 10 15

Gly Trp Asp Lys His Ser Tyr Gly Tyr His Gly Asp Asp Gly His Ser
20 25 30

Phe Cys Ser Ser Gly Thr Gly Gln Pro Tyr Gly Pro Thr Phe Thr Thr
35 40 45

Gly Asp Val Ile Gly Cys Cys Val Asn Leu Ile Asn Asn Thr Cys Phe
50 55 60

Tyr Thr Lys Asn Gly His Ser Leu Gly Ile Ala Phe Thr Asp Leu Pro
65 70 75 80

Pro Asn Leu Tyr Pro Thr Val Gly Leu Gln Thr Pro Gly Glu Val Val
85 90 95

Asp Ala Asn Phe Gly Gln His Pro Phe Val Phe Asp Ile Glu Asp Tyr
100 105 110

Met Arg Glu Trp Arg Thr Lys Ile Gln Ala Gln Ile Asp Arg Phe Pro
115 120 125

Ile Gly Asp Arg Glu Gly Glu Trp Gln Thr Met Ile Gln Lys Met Val
130 135 140

Ser Ser Tyr Leu Val His His Gly Tyr Cys Ala Thr Ala Glu Ala Phe
145 150 155 160

Ala Arg Ser Thr Asp Gln Thr Val Leu Glu Glu Leu Ala Ser Ile Lys
165 170 175

Asn Arg Gln Arg Ile Gln Lys Leu Val Leu Ala Gly Arg Met Gly Glu
180 185 190

Ala Ile Glu Thr Thr Gln Gln Leu Tyr Pro Ser Leu Leu Glu Arg Asn
195 200 205

Pro Asn Leu Leu Phe Thr Leu Lys Val Arg Gln Phe Ile Glu Met Val
210 215 220

Asn Gly Thr Asp Ser Glu Val Arg Cys Leu Gly Gly Arg Ser Pro Lys
225 230 235 240

Ser Gln Asp Ser Tyr Pro Val Ser Pro Arg Pro Phe Ser Ser Pro Ser
245 250 255

Met Ser Pro Ser His Gly Met Asn Ile His Asn Leu Ala Ser Gly Lys
260 265 270

Gly Ser Thr Ala His Phe Ser Gly Phe Glu Ser Cys Ser Asn Gly Val
275 280 285

Ile Ser Asn Lys Ala His Gln Ser Tyr Cys His Ser Asn Lys His Gln
290 295 300

Ser Ser Asn Leu Asn Val Pro Glu Leu Asn Ser Ile Asn Met Ser Arg
305 310 315 320

Ser Gln Gln Val Asn Asn Phe Thr Ser Asn Asp Val Asp Met Glu Thr

325 330 335

Asp His Tyr Ser Asn Gly Val Gly Glu Thr Ser Ser Asn Gly Phe Leu
340 345 350

Asn Gly Ser Ser Lys His Asp His Glu Met Glu Asp Cys Asp Thr Glu
355 360 365

Met Glu Val Asp Ser Ser Gln Leu Arg Arg Gln Leu Cys Gly Gly Ser
370 375 380

Gln Ala Ala Ile Glu Arg Met Ile His Phe Gly Arg Glu Leu Gln Ala
385 390 395 400

Met Ser Glu Gln Leu Arg Arg Asp Cys Gly Lys Asn Thr Ala Asn Lys
405 410 415

Lys Met Leu Lys Asp Ala Phe Ser Leu Leu Ala Tyr Ser Asp Pro Trp
420 425 430

Asn Ser Pro Val Gly Asn Gln Leu Asp Pro Ile Gln Arg Glu Pro Val
435 440 445

Cys Ser Ala Leu Asn Ser Ala Ile Leu Glu Thr His Asn Leu Pro Lys
450 455 460

Gln Pro Pro Leu Ala Leu Ala Met Gly Gln Ala Thr Gln Cys Leu Gly
465 470 475 480

Leu Met Ala Arg Ser Gly Ile Gly Ser Cys Ala Phe Ala Thr Val Glu
485 490 495

Asp Tyr Leu His
500

<210> 265

<211> 430

<212> PRT

<213> Shigella Flexneri

<400> 265

Ile Glu Ile His Gly Lys Ala Gly Leu Phe Leu Glu Gly Gln Ile His
1 5 10 15

Pro Glu Leu Glu Gly Val Glu Ile Val Ile Ser Glu Lys Gly Ala Ser
20 25 30

Ser Pro Leu Ile Thr Val Phe Thr Asp Asp Lys Gly Ala Tyr Ser Val
35 40 45

Gly Pro Leu His Ser Asp Leu Glu Tyr Thr Val Thr Ser Gln Lys Glu
50 55 60

Gly Tyr Val Leu Thr Ala Val Glu Gly Thr Ile Gly Asp Phe Lys Ala
65 70 75 80

Tyr Ala Leu Ala Gly Val Ser Phe Glu Ile Lys Ala Glu Asp Asp Gln
85 90 95

Pro Leu Pro Gly Val Leu Leu Ser Leu Ser Gly Gly Leu Phe Arg Ser
100 105 110

Asn Leu Leu Thr Gln Asp Asn Gly Ile Leu Thr Phe Ser Asn Leu Ser
115 120 125

Pro Gly Gln Tyr Tyr Phe Lys Pro Met Met Lys Glu Phe Arg Phe Glu
130 135 140

Pro Ser Ser Gln Met Ile Glu Val Gln Glu Gly Gln Asn Leu Lys Ile
145 150 155 160

Thr Ile Thr Gly Tyr Arg Thr Ala Tyr Ser Cys Tyr Gly Thr Val Ser
165 170 175

Ser Leu Asn Gly Glu Pro Glu Gln Gly Val Ala Met Glu Ala Val Gly
180 185 190

Gln Asn Asp Cys Ser Ile Tyr Gly Glu Asp Thr Val Thr Asp Glu Glu
195 200 205

Gly Lys Phe Arg Leu Arg Gly Leu Leu Pro Gly Cys Val Tyr His Val
210 215 220

Gln Leu Lys Ala Glu Gly Asn Asp His Ile Glu Arg Ala Leu Pro His
225 230 235 240

His Arg Val Ile Glu Val Gly Asn Asn Asp Ile Asp Asp Val Asn Ile
245 250 255

Ile Val Phe Arg Gln Ile Asn Gln Phe Asp Leu Ser Gly Asn Val Ile
260 265 270

Thr Ser Ser Glu Tyr Leu Pro Thr Leu Trp Val Lys Leu Tyr Lys Ser
275 280 285

Glu Asn Leu Asp Asn Pro Ile Gln Thr Val Ser Leu Gly Gln Ser Leu
290 295 300

Phe Phe His Phe Pro Pro Leu Leu Arg Asp Gly Glu Asn Tyr Val Val
305 310 315 320

Leu Leu Asp Ser Thr Leu Pro Arg Ser Gln Tyr Asp Tyr Ile Leu Pro
325 330 335

Gln Val Ser Phe Thr Ala Val Gly Tyr His Lys His Thr Thr Leu Ile
340 345 350

Phe Asn Pro Thr Arg Lys Leu Pro Glu Gln Asp Ile Ala Gln Gly Ser
355 360 365

Tyr Ile Ala Leu Pro Leu Thr Leu Leu Val Leu Leu Ala Gly Tyr Asn
370 375 380

His Asp Lys Leu Ile Pro Leu Leu Leu Gln Leu Thr Ser Arg Leu Gln
385 390 395 400

Gly Val Arg Ala Leu Gly Gln Ala Ala Ser Asp Asn Ser Gly Pro Glu
405 410 415

Asp Ala Lys Arg Gln Ala Lys Lys Gln Lys Thr Arg Arg Thr
420 425 430

<210> 266

<211> 1138

<212> PRT

<213> Shigella Flexneri

<400> 266

Leu Gly Leu His Ser Pro Ile Ala Leu Asp Val Leu Ser Glu Ala Phe
1 5 10 15

Glu Glu Ser Leu Val Ala Arg Asp Trp Ser Arg Ala Leu Gln Leu Thr
20 25 30

Glu Val Tyr Gly Arg Asp Val Asp Asp Leu Ser Ser Ile Lys Asp Ala
35 40 45

Val Leu Ser Cys Ala Val Ala Tyr Asp Lys Glu Gly Trp Gln Tyr Leu
50 55 60

Phe Pro Val Lys Asp Ala Ser Leu Arg Ser Arg Leu Ala Leu Gln Phe
65 70 75 80

Val Asp Arg Trp Pro Leu Glu Ser Cys Leu Glu Ile Leu Ala Tyr Cys
85 90 95

Ile Ser Asp Thr Ala Val Gln Glu Gly Leu Lys Cys Glu Leu Gln Arg
100 105 110

Lys Leu Ala Glu Leu Gln Val Tyr Gln Lys Ile Leu Gly Leu Gln Ser
115 120 125

Pro Pro Val Trp Cys Asp Trp Gln Thr Leu Arg Ser Cys Cys Val Glu
130 135 140

Asp Pro Ser Thr Val Met Asn Met Ile Leu Glu Ala Gln Glu Tyr Glu
145 150 155 160

Leu Cys Glu Glu Trp Gly Cys Leu Tyr Pro Ile Pro Arg Glu His Leu
165 170 175

Ile Ser Leu His Gln Lys His Leu Leu His Leu Leu Glu Arg Arg Asp
180 185 190

His Asp Lys Ala Leu Gln Leu Leu Arg Arg Ile Pro Asp Pro Thr Met

195 200 205

Cys Leu Glu Val Thr Glu Gln Ser Leu Asp Gln His Thr Ser Leu Ala
210 215 220

Thr Ser His Phe Leu Ala Asn Tyr Leu Thr Thr His Phe Tyr Gly Gln
225 230 235 240

Leu Thr Ala Val Arg His Arg Glu Ile Gln Ala Leu Tyr Val Gly Ser
245 250 255

Lys Ile Leu Leu Thr Leu Pro Glu Gln His Arg Ala Ser Tyr Ser His
260 265 270

Leu Ser Ser Asn Pro Leu Phe Met Leu Glu Gln Leu Leu Met Asn Met
275 280 285

Lys Val Asp Trp Ala Thr Val Ala Val Gln Thr Leu Gln Gln Leu Leu
290 295 300

Val Gly Gln Glu Ile Gly Phe Thr Met Asp Glu Val Asp Ser Leu Leu
305 310 315 320

Ser Arg Tyr Ala Glu Lys Ala Leu Asp Phe Pro Tyr Pro Gln Arg Glu
325 330 335

Lys Arg Ser Asp Ser Val Ile His Leu Gln Glu Ile Val His Gln Ala
340 345 350

Ala Asp Pro Glu Thr Leu Pro Arg Ser Pro Ser Ala Glu Phe Ser Pro
355 360 365

Ala Ala Pro Pro Gly Ile Ser Ser Ile His Ser Pro Ser Leu Arg Glu
370 375 380

Arg Ser Phe Pro Pro Thr Gln Pro Ser Gln Glu Phe Val Pro Pro Ala
385 390 395 400

Thr Pro Pro Ala Arg His Gln Trp Val Pro Asp Glu Thr Glu Ser Ile
405 410 415

Cys Met Val Cys Cys Arg Glu His Phe Thr Met Phe Asn Arg Arg His
420 425 430

```
His Cys Arg Arg Cys Gly Arg Leu Val Cys Ser Ser Cys Ser Thr Lys
        435                 440                 445

Lys Met Val Val Glu Gly Cys Arg Glu Asn Pro Ala Arg Val Cys Asp
    450                 455                 460

Gln Cys Tyr Ser Tyr Cys Asn Lys Asp Val Pro Glu Glu Pro Ser Glu
465                 470                 475                 480

Lys Pro Glu Ala Leu Asp Ser Ser Lys Ser Glu Ser Pro Pro Tyr Ser
                485                 490                 495

Phe Val Val Arg Val Pro Lys Ala Asp Glu Val Glu Trp Ile Leu Asp
            500                 505                 510

Leu Lys Glu Glu Glu Asn Glu Leu Val Arg Ser Glu Phe Tyr Tyr Glu
        515                 520                 525

Gln Ala Pro Ser Ala Ser Leu Cys Ile Ala Ile Leu Asn Leu His Arg
    530                 535                 540

Asp Ser Ile Ala Cys Gly His Gln Leu Ile Glu His Cys Cys Arg Leu
545                 550                 555                 560

Ser Lys Gly Leu Thr Asn Pro Glu Val Asp Ala Gly Leu Leu Thr Asp
                565                 570                 575

Ile Met Lys Gln Leu Leu Phe Ser Ala Lys Met Met Phe Val Lys Ala
            580                 585                 590

Gly Gln Ser Gln Asp Leu Ala Leu Cys Asp Ser Tyr Ile Ser Lys Val
        595                 600                 605

Asp Val Leu Asn Ile Leu Val Ala Ala Ala Tyr Arg His Val Pro Ser
    610                 615                 620

Leu Asp Gln Ile Leu Gln Pro Ala Ala Val Thr Arg Leu Arg Asn Gln
625                 630                 635                 640

Leu Leu Glu Ala Glu Tyr Tyr Gln Leu Gly Val Glu Val Ser Thr Lys
                645                 650                 655
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Thr Gly Leu Asp Thr Thr Gly Ala Trp His Ala Trp Gly Met Ala Cys
            660                 665                 670

Leu Lys Ala Gly Asn Leu Thr Ala Ala Arg Glu Lys Phe Ser Arg Cys
        675                 680                 685

Leu Lys Pro Pro Phe Asp Leu Asn Gln Leu Asn His Gly Ser Arg Leu
    690                 695                 700

Val Gln Asp Val Val Glu Tyr Leu Glu Ser Thr Val Arg Pro Phe Val
705                 710                 715                 720

Ser Leu Gln Asp Asp Asp Tyr Phe Ala Thr Leu Arg Glu Leu Glu Ala
                725                 730                 735

Thr Leu Arg Thr Gln Ser Leu Ser Leu Ala Val Ile Pro Glu Gly Lys
            740                 745                 750

Ile Met Asn Asn Thr Tyr Tyr Gln Glu Cys Leu Phe Tyr Leu His Asn
        755                 760                 765

Tyr Ser Thr Asn Leu Ala Ile Ile Ser Phe Tyr Val Arg His Ser Cys
    770                 775                 780

Leu Arg Glu Ala Leu Leu His Leu Leu Asn Lys Glu Ser Pro Pro Glu
785                 790                 795                 800

Val Phe Ile Glu Gly Ile Phe Gln Pro Ser Tyr Lys Ser Gly Lys Leu
                805                 810                 815

His Thr Leu Glu Asn Leu Leu Glu Ser Ile Asp Pro Thr Leu Glu Ser
            820                 825                 830

Trp Gly Lys Tyr Leu Ile Ala Ala Cys Gln His Leu Gln Lys Lys Asn
        835                 840                 845

Tyr Tyr His Ile Leu Tyr Glu Leu Gln Gln Phe Met Lys Asp Gln Val
    850                 855                 860

Arg Ala Ala Met Thr Cys Ile Arg Phe Phe Ser His Lys Ala Lys Ser
865                 870                 875                 880
```

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Tyr Thr Glu Leu Gly Glu Lys Leu Ser Trp Leu Leu Lys Ala Lys Asp
                885                 890                 895

His Leu Lys Ile Tyr Leu Gln Glu Thr Ser Arg Ser Ser Gly Arg Lys
            900                 905                 910

Lys Thr Thr Phe Phe Arg Lys Lys Met Thr Ala Ala Asp Val Ser Arg
        915                 920                 925

His Met Asn Thr Leu Gln Leu Gln Met Glu Val Thr Arg Phe Leu His
    930                 935                 940

Arg Cys Glu Ser Ala Gly Thr Ser Gln Ile Thr Thr Leu Pro Leu Pro
945                 950                 955                 960

Thr Leu Phe Gly Asn Asn His Met Lys Met Asp Val Ala Cys Lys Val
                965                 970                 975

Met Leu Gly Gly Lys Asn Val Glu Asp Gly Phe Gly Ile Ala Phe Arg
            980                 985                 990

Val Leu Gln Asp Phe Gln Leu Asp  Ala Ala Met Thr Tyr  Cys Arg Ala
        995                 1000                1005

Ala Arg  Gln Leu Val Glu Lys  Glu Lys Tyr Ser Glu  Ile Gln Gln
    1010                1015                1020

Leu Leu  Lys Cys Val Ser Glu  Ser Gly Met Ala Ala  Lys Ser Asp
    1025                1030                1035

Gly Asp  Thr Ile Leu Leu Asn  Cys Leu Glu Ala Phe  Lys Arg Ile
    1040                1045                1050

Pro Pro  Gln Glu Leu Glu Gly  Leu Ile Gln Ala Ile  His Asn Asp
    1055                1060                1065

Asp Asn  Lys Val Arg Ala Tyr  Leu Ile Cys Cys Lys  Leu Arg Ser
    1070                1075                1080

Ala Tyr  Leu Ile Ala Val Lys  Gln Glu His Ser Arg  Ala Thr Ala
    1085                1090                1095

Leu Val  Gln Gln Val Gln Gln  Ala Ala Lys Ser Ser  Gly Asp Ala
```

1100 1105 1110

Val Val Gln Asp Ile Cys Ala Gln Trp Leu Leu Thr Ser His Pro
1115 1120 1125

Arg Gly Ala His Gly Pro Gly Ser Arg Lys
1130 1135

<210> 267

<211> 9

<212> PRT

<213> Shigella Flexneri

<400> 267

Leu Pro Leu Cys Leu Ala Gly Phe Leu
1 5

<210> 268

<211> 12

<212> PRT

<213> Shigella Flexneri

<400> 268

Asn Phe His Leu Pro Arg Glu Val Tyr Val Phe Phe
1 5 10

<210> 269

<211> 705

<212> PRT

<213> Shigella Flexneri

<400> 269

Asn Pro Val Pro Leu Tyr Ala Pro Asn Leu Ser Pro Pro Ala Asp Ser
1 5 10 15

```
Arg Ile His Val Pro Ala Ser Gly Tyr Cys Cys Leu Glu Cys Gly Asp
            20                  25                  30

Ala Phe Ala Leu Glu Lys Ser Leu Ser Gln His Tyr Gly Arg Arg Ser
        35                  40                  45

Val His Ile Glu Val Leu Cys Thr Leu Cys Ser Lys Thr Leu Leu Phe
    50                  55                  60

Phe Asn Lys Cys Ser Leu Leu Arg His Ala Arg Asp His Lys Ser Lys
65                  70                  75                  80

Gly Leu Val Met Gln Cys Ser Gln Leu Leu Val Lys Pro Ile Ser Ala
                85                  90                  95

Asp Gln Met Phe Val Ser Ala Pro Val Asn Ser Thr Ala Pro Ala Ala
            100                 105                 110

Pro Ala Pro Ser Ser Ser Pro Lys His Gly Leu Thr Ser Gly Ser Ala
        115                 120                 125

Ser Pro Pro Pro Pro Ala Leu Pro Leu Tyr Pro Asp Pro Val Arg Leu
    130                 135                 140

Ile Arg Tyr Ser Ile Lys Cys Leu Glu Cys His Lys Gln Met Arg Asp
145                 150                 155                 160

Tyr Met Val Leu Ala Ala His Phe Gln Arg Thr Thr Glu Glu Thr Glu
                165                 170                 175

Gly Leu Thr Cys Gln Val Cys Gln Met Leu Leu Pro Asn Gln Cys Ser
            180                 185                 190

Phe Cys Ala His Gln Arg Ile His Ala His Lys Ser Pro Tyr Cys Cys
        195                 200                 205

Pro Glu Cys Gly Val Leu Cys Arg Ser Ala Tyr Phe Gln Thr His Val
    210                 215                 220

Lys Glu Asn Cys Leu His Tyr Ala Arg Lys Val Gly Tyr Arg Cys Ile
225                 230                 235                 240
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```
His Cys Gly Val Val His Leu Thr Leu Ala Leu Leu Lys Ser His Ile
                245                 250                 255

Gln Glu Arg His Cys Gln Val Phe His Lys Cys Ala Phe Cys Pro Met
            260                 265                 270

Ala Phe Lys Thr Ala Ser Ser Thr Ala Asp His Ser Ala Thr Gln His
        275                 280                 285

Pro Thr Gln Pro His Arg Pro Ser Gln Leu Ile Tyr Lys Cys Ser Cys
    290                 295                 300

Glu Met Val Phe Asn Lys Lys Arg His Ile Gln Gln His Phe Tyr Gln
305                 310                 315                 320

Asn Val Ser Lys Thr Gln Val Gly Val Phe Lys Cys Pro Glu Cys Pro
                325                 330                 335

Leu Leu Phe Val Gln Lys Pro Glu Leu Met Gln His Val Lys Ser Thr
            340                 345                 350

His Gly Val Pro Arg Asn Val Asp Glu Leu Ser Asn Leu Gln Ser Ser
        355                 360                 365

Ala Asp Thr Ser Ser Ser Arg Pro Gly Ser Arg Val Pro Thr Glu Pro
    370                 375                 380

Pro Ala Thr Ser Val Ala Ala Arg Ser Ser Ser Leu Pro Ser Gly Arg
385                 390                 395                 400

Trp Gly Arg Pro Glu Ala His Arg Arg Val Glu Ala Arg Pro Arg Leu
                405                 410                 415

Arg Asn Thr Gly Trp Thr Cys Gln Glu Cys Gln Glu Trp Val Pro Asp
            420                 425                 430

Arg Glu Ser Tyr Val Ser His Met Lys Lys Ser His Gly Arg Thr Leu
        435                 440                 445

Lys Arg Tyr Pro Cys Arg Gln Cys Glu Gln Ser Phe His Thr Pro Asn
    450                 455                 460
```

Ser Leu Arg Lys His Ile Arg Asn Asn His Asp Thr Val Lys Lys Phe
465 470 475 480

Tyr Thr Cys Gly Tyr Cys Thr Glu Asp Ser Pro Ser Phe Pro Arg Pro
485 490 495

Ser Leu Leu Glu Ser His Ile Ser Leu Met His Gly Ile Arg Asn Pro
500 505 510

Asp Leu Ser Gln Thr Ser Lys Val Lys Pro Pro Gly Gly His Ser Pro
515 520 525

Gln Val Asn His Leu Lys Arg Pro Val Ser Gly Val Gly Asp Ala Pro
530 535 540

Gly Thr Ser Asn Gly Ala Thr Val Ser Ser Thr Lys Arg His Lys Ser
545 550 555 560

Leu Phe Gln Cys Ala Lys Cys Ser Phe Ala Thr Asp Ser Gly Leu Glu
565 570 575

Phe Gln Ser His Ile Pro Gln His Gln Val Asp Ser Ser Thr Ala Gln
580 585 590

Cys Leu Leu Cys Gly Leu Cys Tyr Thr Ser Ala Ser Ser Leu Ser Arg
595 600 605

His Leu Phe Ile Val His Lys Val Arg Asp Gln Glu Glu Glu Glu Glu
610 615 620

Glu Glu Ala Ala Ala Ala Glu Met Ala Val Glu Val Ala Glu Pro Glu
625 630 635 640

Glu Gly Ser Gly Glu Glu Val Pro Met Glu Thr Arg Glu Asn Gly Leu
645 650 655

Glu Glu Cys Ala Gly Glu Pro Leu Ser Ala Asp Pro Glu Ala Arg Arg
660 665 670

Leu Leu Gly Pro Ala Pro Glu Asp Asp Gly Gly His Asn Asp His Ser
675 680 685

Gln Pro Gln Ala Ser Gln Asp Gln Asp Ser His Thr Leu Ser Pro Gln

690 695 700

Val
705

<210> 270

<211> 11

<212> PRT

<213> Shigella Flexneri

<400> 270

Glu His Ser Ser Ser Leu Val Met Leu Phe Phe
1 5 10

<210> 271

<211> 24

<212> PRT

<213> Shigella Flexneri

<400> 271

Val His Gln Val Thr Asp Leu Ser Arg Asn Ala Gln Leu Phe Lys Arg
1 5 10 15

Ser Leu Leu Glu Met Ala Thr Phe
20

<210> 272

<211> 7

<212> PRT

<213> Shigella Flexneri

<400> 272

Gly Gly Val Gly Met Gly Arg
1 5

<210> 273

<211> 7

<212> PRT

<213> Shigella Flexneri

<220>

<221> MISC_FEATURE

<222> (4)..(6)

<223> MISC_FEATURE

<400> 273

Phe Glu Gly Xaa Xaa Xaa Thr
1 5

<210> 274

<211> 20

<212> PRT

<213> Shigella Flexneri

<220>

<221> MISC_FEATURE

<222> (19)..(19)

<223> MISC_FEATURE

<400> 274

Ala Gln Ala Val Ile Pro Tyr Gln Ala Val Lys Ile Tyr Ser Leu Val
1 5 10 15

Phe Phe Xaa Lys
20

<210> 275

<211> 35

<212> PRT

<213> Shigella Flexneri

<400> 275

Arg Val Gly Met Gly Trp Ala Ser Val Arg Pro Ser Asp Pro Pro His
1 5 10 15

Val Cys Cys Pro Lys Pro Arg Arg Ser Leu Val Trp Tyr Ser Val Ser
20 25 30

Gly Leu Gly
35

<210> 276

<211> 49

<212> PRT

<213> Shigella Flexneri

<220>

<221> MISC_FEATURE

<222> (21)..(22)

<223> MISC_FEATURE

<220>

<221> MISC_FEATURE

<222> (24)..(31)

<223> MISC_FEATURE

<220>

<221> MISC_FEATURE

<222> (33)..(38)

<223> MISC_FEATURE

<220>

<221> MISC_FEATURE

<222> (40)..(41)

<223> MISC_FEATURE

<220>

<221> MISC_FEATURE

<222> (44)..(44)

<223> MISC_FEATURE

<220>

<221> MISC_FEATURE

<222> (46)..(46)

<223> MISC_FEATURE

<220>

<221> MISC_FEATURE

<222> (49)..(49)

<223> MISC_FEATURE

<400> 276

Pro Pro Pro Pro Thr His Val His Thr Val Ser Ala Gln Cys Leu Leu
1 5 10 15

Phe Phe Phe Lys Xaa Xaa Phe Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Lys
20 25 30

Xaa Xaa Xaa Xaa Xaa Xaa Phe Xaa Xaa Phe Phe Xaa Phe Xaa Phe Phe
35 40 45

Xaa

<210> 277

<211> 898

<212> PRT

<213> Shigella Flexneri

<400> 277

Gln Lys Asp Asp Lys Glu Pro Gln Pro Val Lys Lys Thr Val Thr Gly
1 5 10 15

Thr Asp Ala Asp Leu Arg Arg Leu Ser Leu Lys Asn Ala Lys Gln Leu
20 25 30

Leu Arg Lys Phe Gly Val Pro Glu Glu Glu Ile Lys Lys Leu Ser Arg
35 40 45

Trp Glu Val Ile Asp Val Val Arg Thr Met Ser Thr Glu Gln Ala Arg
50 55 60

Ser Gly Glu Gly Pro Met Ser Lys Phe Ala Arg Gly Ser Arg Phe Ser
65 70 75 80

Val Ala Glu His Gln Glu Arg Tyr Lys Glu Glu Cys Gln Arg Ile Phe
85 90 95

Asp Leu Gln Asn Lys Val Leu Ser Ser Thr Glu Val Leu Ser Thr Asp
100 105 110

Thr Asp Ser Ser Ser Ala Glu Asp Ser Asp Phe Glu Glu Met Gly Lys
115 120 125

Asn Ile Glu Asn Met Leu Gln Asn Lys Lys Thr Ser Ser Gln Leu Ser
130 135 140

Arg Glu Arg Glu Glu Gln Glu Arg Lys Glu Leu Gln Arg Met Leu Leu
145 150 155 160

Ala Ala Gly Ser Ala Ala Ser Gly Asn Asn His Arg Asp Asp Asp Thr
165 170 175

Ala Ser Val Thr Ser Leu Asn Ser Ser Ala Thr Gly Arg Cys Leu Lys
180 185 190

Ile Tyr Arg Thr Phe Arg Asp Glu Glu Gly Lys Glu Tyr Val Arg Cys
195 200 205

Glu Thr Val Arg Lys Pro Ala Val Ile Asp Ala Tyr Val Arg Ile Arg
210 215 220

Thr Thr Lys Asp Glu Glu Phe Ile Arg Lys Phe Ala Leu Phe Asp Glu
225 230 235 240

Gln His Arg Glu Glu Met Arg Lys Glu Arg Arg Arg Ile Gln Glu Gln
245 250 255

Leu Arg Arg Leu Lys Arg Asn Gln Glu Lys Glu Lys Leu Lys Gly Pro
260 265 270

Pro Glu Lys Lys Pro Lys Lys Met Lys Glu Arg Pro Asp Leu Lys Leu
275 280 285

Lys Cys Gly Ala Cys Gly Ala Ile Gly His Met Arg Thr Asn Lys Phe
290 295 300

Cys Pro Leu Tyr Tyr Gln Thr Asn Ala Pro Pro Ser Asn Pro Val Ala
305 310 315 320

Met Thr Glu Glu Gln Glu Glu Glu Leu Glu Lys Thr Val Ile His Asn
325 330 335

Asp Asn Glu Glu Leu Ile Lys Val Glu Gly Thr Lys Ile Val Leu Gly
340 345 350

Lys Gln Leu Ile Glu Ser Ala Asp Glu Val Arg Arg Lys Ser Leu Val
355 360 365

Leu Lys Phe Pro Lys Gln Gln Leu Pro Pro Lys Lys Lys Arg Arg Val

370 375 380

Gly Thr Thr Val His Cys Asp Tyr Leu Asn Arg Pro His Lys Ser Ile
385 390 395 400

His Arg Arg Arg Thr Asp Pro Met Val Thr Leu Ser Ser Ile Leu Glu
405 410 415

Ser Ile Ile Asn Asp Met Arg Asp Leu Pro Asn Thr Tyr Pro Phe His
420 425 430

Thr Pro Val Asn Ala Lys Val Val Lys Asp Tyr Tyr Lys Ile Ile Thr
435 440 445

Arg Pro Met Asp Leu Gln Thr Leu Arg Glu Asn Val Arg Lys Arg Leu
450 455 460

Tyr Pro Ser Arg Glu Glu Phe Arg Glu His Leu Glu Leu Ile Val Lys
465 470 475 480

Asn Ser Ala Thr Tyr Asn Gly Pro Lys His Ser Leu Thr Gln Ile Ser
485 490 495

Gln Ser Met Leu Asp Leu Cys Asp Glu Lys Leu Lys Glu Lys Glu Asp
500 505 510

Lys Leu Ala Arg Leu Glu Lys Ala Ile Asn Pro Leu Leu Asp Asp Asp
515 520 525

Asp Gln Val Ala Phe Ser Phe Ile Leu Asp Asn Ile Val Thr Gln Lys
530 535 540

Met Met Ala Val Pro Asp Ser Trp Pro Phe His His Pro Val Asn Lys
545 550 555 560

Lys Phe Val Pro Asp Tyr Tyr Lys Val Ile Val Asn Pro Met Asp Leu
565 570 575

Glu Thr Ile Arg Lys Asn Ile Ser Lys His Lys Tyr Gln Ser Arg Glu
580 585 590

Ser Phe Leu Asp Asp Val Asn Leu Ile Leu Ala Asn Ser Val Lys Tyr
595 600 605

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Asn Gly Pro Glu Ser Gln Tyr Thr Lys Thr Ala Gln Glu Ile Val Asn
    610                 615                 620

Val Cys Tyr Gln Thr Leu Thr Glu Tyr Asp Glu His Leu Thr Gln Leu
625                 630                 635                 640

Glu Lys Asp Ile Cys Thr Ala Lys Glu Ala Ala Leu Glu Glu Ala Glu
                645                 650                 655

Leu Glu Ser Leu Asp Pro Met Thr Pro Gly Pro Tyr Thr Pro Gln Pro
            660                 665                 670

Pro Asp Leu Tyr Asp Thr Asn Thr Ser Leu Ser Met Ser Arg Asp Ala
        675                 680                 685

Ser Val Phe Gln Asp Glu Ser Asn Met Ser Val Leu Asp Ile Pro Ser
    690                 695                 700

Ala Thr Pro Glu Lys Gln Val Thr Gln Glu Gly Glu Asp Gly Asp Gly
705                 710                 715                 720

Asp Leu Ala Asp Glu Glu Glu Gly Thr Val Gln Gln Pro Gln Ala Ser
                725                 730                 735

Val Leu Tyr Glu Asp Leu Leu Met Ser Glu Gly Glu Asp Asp Glu Glu
            740                 745                 750

Asp Ala Gly Ser Asp Glu Glu Gly Asp Asn Pro Phe Ser Ala Ile Gln
        755                 760                 765

Leu Ser Glu Ser Gly Ser Asp Ser Asp Val Gly Ser Gly Gly Ile Arg
    770                 775                 780

Pro Lys Gln Pro Arg Met Leu Gln Glu Asn Thr Arg Met Asp Met Glu
785                 790                 795                 800

Asn Glu Glu Ser Met Met Ser Tyr Glu Gly Asp Gly Gly Glu Ala Ser
                805                 810                 815

His Gly Leu Glu Asp Ser Asn Ile Ser Tyr Gly Ser Tyr Glu Glu Pro
            820                 825                 830
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Asp Pro Lys Ser Asn Thr Gln Asp Thr Ser Phe Ser Ser Ile Gly Gly
835 840 845

Tyr Glu Val Ser Glu Glu Glu Glu Asp Glu Glu Glu Glu Glu Gln Arg
850 855 860

Ser Gly Pro Ser Val Leu Ser Gln Val His Leu Ser Glu Asp Glu Glu
865 870 875 880

Asp Ser Glu Asp Phe His Ser Ile Ala Gly Asp Ser Asp Leu Asp Ser
885 890 895

Asp Glu

<210> 278

<211> 16

<212> PRT

<213> Shigella Flexneri

<400> 278

Pro Leu Tyr Ser Thr Arg Leu Ile Leu Thr Ser Pro Leu Ala Tyr Leu
1 5 10 15

<210> 279

<211> 9

<212> PRT

<213> Shigella Flexneri

<400> 279

Pro Pro His Leu Thr Leu Val Phe Phe
1 5

<210> 280

<211> 197

<212> PRT

<213> Shigella Flexneri

<400> 280

Glu Ala Arg Lys Ala His Gln Leu Trp Leu Ser Val Glu Ala Leu Lys
1 5 10 15

Tyr Ser Met Lys Thr Ser Ser Ala Glu Thr Pro Thr Ile Pro Leu Gly
20 25 30

Ser Ala Val Glu Ala Ile Lys Ala Asn Cys Ser Asp Asn Glu Phe Thr
35 40 45

Gln Ala Leu Thr Ala Ala Ile Pro Pro Glu Ser Leu Thr Arg Gly Val
50 55 60

Tyr Ser Glu Glu Thr Leu Arg Ala Arg Phe Tyr Ala Val Gln Lys Leu
65 70 75 80

Ala Arg Arg Val Ala Met Ile Asp Glu Thr Arg Asn Ser Leu Tyr Gln
85 90 95

Tyr Phe Leu Ser Tyr Leu Gln Ser Leu Leu Leu Phe Pro Pro Gln Gln
100 105 110

Leu Lys Pro Pro Pro Glu Leu Cys Pro Glu Asp Ile Asn Thr Phe Lys
115 120 125

Leu Leu Ser Tyr Ala Ser Tyr Cys Ile Glu His Gly Asp Leu Glu Leu
130 135 140

Ala Ala Lys Phe Val Asn Gln Leu Lys Gly Glu Ser Arg Arg Val Ala
145 150 155 160

Gln Asp Trp Leu Lys Glu Ala Arg Met Thr Leu Glu Thr Lys Gln Ile
165 170 175

Val Glu Ile Leu Thr Ala Tyr Ala Ser Ala Val Gly Ile Gly Thr Thr
180 185 190

Gln Val Gln Pro Glu

195

<210> 281

<211> 144

<212> PRT

<213> Shigella Flexneri

<400> 281

Met Lys Ser Gln Trp Cys Arg Pro Val Ala Met Asp Leu Gly Val Tyr
1 5 10 15

Gln Leu Arg His Phe Ser Ile Ser Phe Leu Ser Ser Leu Leu Gly Thr
20 25 30

Glu Asn Ala Ser Val Arg Leu Asp Asn Ser Ser Ser Gly Ala Ser Val
35 40 45

Val Ala Ile Asp Asn Lys Ile Glu Gln Ala Met Asp Leu Val Lys Ser
50 55 60

His Leu Met Tyr Ala Val Arg Glu Glu Val Glu Val Leu Lys Glu Gln
65 70 75 80

Ile Lys Glu Leu Ile Glu Lys Asn Ser Gln Leu Glu Gln Glu Asn Asn
85 90 95

Leu Leu Lys Thr Leu Ala Ser Pro Glu Gln Leu Ala Gln Phe Gln Ala
100 105 110

Gln Leu Gln Thr Gly Ser Pro Pro Ala Thr Thr Gln Pro Gln Gly Thr
115 120 125

Thr Gln Pro Pro Ala Gln Pro Ala Ser Gln Gly Ser Gly Pro Thr Ala
130 135 140

<210> 282

<211> 416

<212> PRT

<213> Shigella Flexneri

<400> 282

Trp Glu Gln Glu Leu Tyr Asn Asn Phe Val Tyr Asn Ser Pro Arg Gly
1 5 10 15

Tyr Phe His Thr Phe Ala Gly Asp Thr Cys Gln Val Ala Leu Asn Phe
20 25 30

Ala Asn Glu Glu Glu Ala Lys Lys Phe Arg Lys Ala Val Thr Asp Leu
35 40 45

Leu Gly Arg Arg Gln Arg Lys Ser Glu Lys Arg Arg Asp Pro Pro Asn
50 55 60

Gly Pro Asn Leu Pro Met Ala Thr Val Asp Ile Lys Asn Pro Glu Ile
65 70 75 80

Thr Thr Asn Arg Phe Tyr Gly Pro Gln Val Asn Asn Ile Ser His Thr
85 90 95

Lys Glu Lys Lys Lys Gly Lys Ala Lys Lys Lys Arg Leu Thr Lys Gly
100 105 110

Asp Ile Gly Thr Pro Ser Asn Phe Gln His Ile Gly His Val Gly Trp
115 120 125

Asp Pro Asn Thr Gly Ser Asp Leu Asn Asn Leu Asp Pro Glu Leu Lys
130 135 140

Asn Leu Phe Asp Met Cys Gly Ile Leu Glu Ala Gln Leu Lys Glu Arg
145 150 155 160

Glu Thr Leu Lys Val Ile Tyr Asp Phe Ile Glu Lys Thr Gly Gly Val
165 170 175

Glu Ala Val Lys Asn Glu Leu Arg Arg Gln Ala Pro Pro Pro Pro Pro
180 185 190

Pro Ser Arg Gly Gly Pro Pro Pro Pro Pro Pro Pro Pro His Ser Ser
195 200 205

Gly Pro Pro Pro Pro Pro Ala Arg Gly Arg Gly Ala Pro Pro Pro Pro
210 215 220

Pro Ser Arg Ala Pro Thr Ala Ala Pro Pro Pro Pro Pro Pro Ser Arg
225 230 235 240

Pro Ser Val Glu Val Pro Pro Pro Pro Pro Asn Arg Met Tyr Pro Pro
245 250 255

Pro Pro Pro Ala Leu Pro Ser Ser Ala Pro Ser Gly Pro Pro Pro Pro
260 265 270

Pro Pro Ser Val Leu Gly Val Gly Pro Val Ala Pro Pro Pro Pro Pro
275 280 285

Pro Pro Pro Pro Pro Pro Gly Pro Pro Pro Pro Pro Gly Leu Pro Ser
290 295 300

Asp Gly Asp His Gln Val Pro Thr Thr Ala Gly Asn Lys Ala Ala Leu
305 310 315 320

Leu Asp Gln Ile Arg Glu Gly Ala Gln Leu Lys Lys Val Glu Gln Asn
325 330 335

Ser Arg Pro Val Ser Cys Ser Gly Arg Asp Ala Leu Leu Asp Gln Ile
340 345 350

Arg Gln Gly Ile Gln Leu Lys Ser Val Ala Asp Gly Gln Glu Ser Thr
355 360 365

Pro Pro Thr Pro Ala Pro Thr Ser Gly Ile Val Gly Ala Leu Met Glu
370 375 380

Val Met Gln Lys Arg Ser Lys Ala Ile His Ser Ser Asp Glu Asp Glu
385 390 395 400

Asp Glu Asp Asp Glu Glu Asp Phe Glu Asp Asp Asp Glu Trp Glu Asp
405 410 415

<210> 283

<211> 21

<212> PRT

<213> Shigella Flexneri

<400> 283

Ile Ala Phe His Val Tyr Cys Asp Ser Ala Leu Gly Arg Tyr Phe Leu
1 5 10 15

Phe Leu Leu Leu Leu
20

<210> 284

<211> 28

<212> PRT

<213> Shigella Flexneri

<400> 284

Glu Lys Arg Gly Ser Asn Ser Val Phe Val His Lys Lys Ser Ile Ile
1 5 10 15

Pro Glu Glu Glu Cys Tyr Ile Asn Cys Val Phe Gln
20 25

<210> 285

<211> 1488

<212> PRT

<213> Shigella Flexneri

<400> 285

Ala Ala Leu Pro Asp Asp Ile Arg Arg Glu Val Leu Gln Asn Gln Leu
1 5 10 15

Gly Ile Arg Pro Pro Thr Arg Thr Ala Pro Ser Thr Asn Ser Ser Ala
20 25 30

Pro Ala Val Val Gly Asn Pro Gly Val Thr Glu Val Ser Pro Glu Phe

35 40 45

Leu Ala Ala Leu Pro Pro Ala Ile Gln Glu Glu Val Leu Ala Gln Gln
50 55 60

Arg Ala Glu Gln Gln Arg Arg Glu Leu Ala Gln Asn Ala Ser Ser Asp
65 70 75 80

Thr Pro Met Asp Pro Val Thr Phe Ile Gln Thr Leu Pro Ser Asp Leu
85 90 95

Arg Arg Ser Val Leu Glu Asp Met Glu Asp Ser Val Leu Ala Val Met
100 105 110

Pro Pro Asp Ile Ala Ala Glu Ala Gln Ala Leu Arg Arg Glu Gln Glu
115 120 125

Ala Arg Gln Arg Gln Leu Met His Glu Arg Leu Phe Gly His Ser Ser
130 135 140

Thr Ser Ala Leu Ser Ala Ile Leu Arg Ser Pro Ala Phe Thr Ser Arg
145 150 155 160

Leu Ser Gly Asn Arg Gly Val Gln Tyr Thr Arg Leu Ala Val Gln Arg
165 170 175

Gly Gly Thr Phe Gln Met Gly Gly Ser Ser Ser His Asn Arg Pro Ser
180 185 190

Gly Ser Asn Val Asp Thr Leu Leu Arg Leu Arg Gly Arg Leu Leu Leu
195 200 205

Asp His Glu Ala Leu Ser Cys Leu Leu Val Leu Leu Phe Val Asp Glu
210 215 220

Pro Lys Leu Asn Thr Ser Arg Leu His Arg Val Leu Arg Asn Leu Cys
225 230 235 240

Tyr His Ala Gln Thr Arg His Trp Val Ile Arg Ser Leu Leu Ser Ile
245 250 255

Leu Gln Arg Ser Ser Glu Ser Glu Leu Cys Ile Glu Thr Pro Lys Leu
260 265 270

Thr Thr Ser Glu Glu Lys Gly Lys Lys Ser Ser Lys Ser Cys Gly Ser
275 280 285

Ser Ser His Glu Asn Arg Pro Leu Asp Leu Leu His Lys Met Glu Ser
290 295 300

Lys Ser Ser Asn Gln Leu Ser Trp Leu Ser Val Ser Met Asp Ala Ala
305 310 315 320

Leu Gly Cys Arg Thr Asn Ile Phe Gln Ile Gln Arg Ser Gly Gly Arg
325 330 335

Lys His Thr Glu Lys His Ala Ser Gly Gly Ser Thr Val His Ile His
340 345 350

Pro Gln Ala Ala Pro Val Val Cys Arg His Val Leu Asp Thr Leu Ile
355 360 365

Gln Leu Ala Lys Val Phe Pro Ser His Phe Thr Gln Gln Arg Thr Lys
370 375 380

Glu Thr Asn Cys Glu Ser Asp Arg Glu Arg Gly Asn Lys Ala Cys Ser
385 390 395 400

Pro Cys Ser Ser Gln Ser Ser Ser Ser Gly Ile Cys Thr Asp Phe Trp
405 410 415

Asp Leu Leu Val Lys Leu Asp Asn Met Asn Val Ser Arg Lys Gly Lys
420 425 430

Asn Ser Val Lys Ser Val Pro Val Ser Ala Gly Gly Glu Gly Glu Thr
435 440 445

Ser Pro Tyr Ser Leu Glu Ala Ser Pro Leu Gly Gln Leu Met Asn Met
450 455 460

Leu Ser His Pro Val Ile Arg Arg Ser Ser Leu Leu Thr Glu Lys Leu
465 470 475 480

Leu Arg Leu Leu Ser Leu Ile Ser Ile Ala Leu Pro Glu Asn Lys Val
485 490 495

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Ser Glu Ala Gln Ala Asn Ser Gly Ser Gly Ala Ser Ser Thr Thr Thr
            500                 505                 510

Ala Thr Ser Thr Thr Ser Thr Thr Thr Thr Thr Ala Ala Ser Thr Thr
        515                 520                 525

Pro Thr Pro Pro Thr Ala Pro Thr Pro Val Thr Ser Ala Pro Ala Leu
    530                 535                 540

Val Ala Ala Thr Ala Ile Ser Thr Ile Val Val Ala Ala Ser Thr Thr
545                 550                 555                 560

Val Thr Thr Pro Thr Thr Ala Thr Thr Thr Val Ser Ile Ser Pro Thr
                565                 570                 575

Thr Lys Gly Ser Lys Ser Pro Ala Lys Val Ser Asp Gly Gly Ser Ser
            580                 585                 590

Ser Thr Asp Phe Lys Met Val Ser Ser Gly Leu Thr Glu Asn Gln Leu
        595                 600                 605

Gln Leu Ser Val Glu Val Leu Thr Ser His Ser Cys Ser Glu Glu Gly
    610                 615                 620

Leu Glu Asp Ala Ala Asn Val Leu Leu Gln Leu Ser Arg Gly Asp Ser
625                 630                 635                 640

Gly Thr Arg Asp Thr Val Leu Lys Leu Leu Leu Asn Gly Ala Arg His
                645                 650                 655

Leu Gly Tyr Thr Leu Cys Lys Gln Ile Gly Thr Leu Leu Ala Glu Leu
            660                 665                 670

Arg Glu Tyr Asn Leu Glu Gln Gln Arg Arg Ala Gln Cys Glu Thr Leu
        675                 680                 685

Ser Pro Asp Gly Leu Pro Glu Glu Gln Pro Gln Thr Thr Lys Leu Lys
    690                 695                 700

Gly Lys Met Gln Ser Arg Phe Asp Met Ala Glu Asn Val Val Ile Val
705                 710                 715                 720
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Ala Ser Gln Lys Arg Pro Leu Gly Gly Arg Glu Leu Gln Leu Pro Ser
725 730 735

Met Ser Met Leu Thr Ser Lys Thr Ser Thr Gln Lys Phe Phe Leu Arg
740 745 750

Val Leu Gln Val Ile Ile Gln Leu Arg Asp Asp Thr Arg Arg Ala Asn
755 760 765

Lys Lys Ala Lys Gln Thr Gly Arg Leu Gly Ser Ser Gly Leu Gly Ser
770 775 780

Ala Ser Ser Ile Gln Ala Ala Val Arg Gln Leu Glu Ala Glu Ala Asp
785 790 795 800

Ala Ile Ile Gln Met Val Arg Glu Gly Gln Arg Ala Arg Arg Gln Gln
805 810 815

Gln Ala Ala Thr Ser Glu Ser Ser Gln Ser Glu Ala Ser Val Arg Arg
820 825 830

Glu Glu Ser Pro Met Asp Val Asp Gln Pro Ser Pro Ser Ala Gln Asp
835 840 845

Thr Gln Ser Ile Ala Ser Asp Gly Thr Pro Gln Gly Glu Lys Glu Lys
850 855 860

Glu Glu Arg Pro Pro Glu Leu Pro Leu Leu Ser Glu Gln Leu Ser Leu
865 870 875 880

Asp Glu Leu Trp Asp Met Leu Gly Glu Cys Leu Lys Glu Leu Glu Glu
885 890 895

Ser His Asp Gln His Ala Val Leu Val Leu Gln Pro Ala Val Glu Ala
900 905 910

Phe Phe Leu Val His Ala Thr Glu Arg Glu Ser Lys Pro Pro Val Arg
915 920 925

Asp Thr Arg Glu Ser Gln Leu Ala His Ile Lys Asp Glu Pro Pro Pro
930 935 940

Leu Ser Pro Ala Pro Leu Thr Pro Ala Thr Pro Ser Ser Leu Asp Pro

945 950 955 960

Phe Phe Ser Arg Glu Pro Ser Ser Met His Ile Ser Ser Ser Leu Pro
965 970 975

Pro Asp Thr Gln Lys Phe Leu Arg Phe Ala Glu Thr His Arg Thr Val
980 985 990

Leu Asn Gln Ile Leu Arg Gln Ser Thr Thr His Leu Ala Asp Gly Pro
995 1000 1005

Phe Ala Val Leu Val Asp Tyr Ile Arg Val Leu Asp Phe Asp Val
1010 1015 1020

Lys Arg Lys Tyr Phe Arg Gln Glu Leu Glu Arg Leu Asp Glu Gly
1025 1030 1035

Leu Arg Lys Glu Asp Met Ala Val His Val Arg Arg Asp His Val
1040 1045 1050

Phe Glu Asp Ser Tyr Arg Glu Leu His Arg Lys Ser Pro Glu Glu
1055 1060 1065

Met Lys Asn Arg Leu Tyr Ile Val Phe Glu Gly Glu Glu Gly Gln
1070 1075 1080

Asp Ala Gly Gly Leu Leu Arg Glu Trp Tyr Met Ile Ile Ser Arg
1085 1090 1095

Glu Met Phe Asn Pro Met Tyr Ala Leu Phe Arg Thr Ser Pro Gly
1100 1105 1110

Asp Arg Val Thr Tyr Thr Ile Asn Pro Ser Ser His Cys Asn Pro
1115 1120 1125

Asn His Leu Ser Tyr Phe Lys Phe Val Gly Arg Ile Val Ala Lys
1130 1135 1140

Ala Val Tyr Asp Asn Arg Leu Leu Glu Cys Tyr Phe Thr Arg Ser
1145 1150 1155

Phe Tyr Lys His Ile Leu Gly Lys Ser Val Arg Tyr Thr Asp Met
1160 1165 1170

Glu Ser Glu Asp Tyr His Phe Tyr Gln Gly Leu Val Tyr Leu Leu
1175 1180 1185

Glu Asn Asp Val Ser Thr Leu Gly Tyr Asp Leu Thr Phe Ser Thr
1190 1195 1200

Glu Val Gln Glu Phe Gly Val Cys Glu Val Arg Asp Leu Lys Pro
1205 1210 1215

Asn Gly Ala Asn Ile Leu Val Thr Glu Glu Asn Lys Lys Glu Tyr
1220 1225 1230

Val His Leu Val Cys Gln Met Arg Met Thr Gly Ala Ile Arg Lys
1235 1240 1245

Gln Leu Ala Ala Phe Leu Glu Gly Phe Tyr Glu Ile Ile Pro Lys
1250 1255 1260

Arg Leu Ile Ser Ile Phe Thr Glu Gln Glu Leu Glu Leu Leu Ile
1265 1270 1275

Ser Gly Leu Pro Thr Ile Asp Ile Asp Asp Leu Lys Ser Asn Thr
1280 1285 1290

Glu Tyr His Lys Tyr Gln Ser Asn Ser Ile Gln Ile Gln Trp Phe
1295 1300 1305

Trp Arg Ala Leu Arg Ser Phe Asp Gln Ala Asp Arg Ala Lys Phe
1310 1315 1320

Leu Gln Phe Val Thr Gly Thr Ser Lys Val Pro Leu Gln Gly Phe
1325 1330 1335

Ala Ala Leu Glu Gly Met Asn Gly Ile Gln Lys Phe Gln Ile His
1340 1345 1350

Arg Asp Asp Arg Ser Thr Asp Arg Leu Pro Ser Ala His Thr Cys
1355 1360 1365

Phe Asn Gln Leu Asp Leu Pro Ala Tyr Glu Ser Phe Glu Lys Ser
1370 1375 1380

Ala Thr Cys Tyr Cys Trp Leu Ser Arg Ser Ala Leu Lys Ala Leu
1385 1390 1395

Gly Trp Pro Asn Lys Ala Leu Pro Asn Ser Val Gly Phe Phe Leu
1400 1405 1410

Pro Leu Leu Asp Leu Gly Arg Gly Glu Leu Lys Lys Glu Pro Glu
1415 1420 1425

Arg Asn Cys Gln Lys Pro Ile Asn Glu Ile His Gln Leu Thr Val
1430 1435 1440

Cys Val Pro Ala Ala Pro Ser Ser Pro Ala His Thr Cys Ser Ser
1445 1450 1455

Ser His Ser Leu Pro Ala Ala Cys Phe Leu Thr Phe Ser Pro Leu
1460 1465 1470

Ser Met Pro Ser Met Ile Pro Thr Pro Cys Val Leu Lys Arg Gln
1475 1480 1485

<210> 286

<211> 476

<212> PRT

<213> Shigella Flexneri

<400> 286

Arg Lys Cys Ser Gln His Asn Arg Leu Arg Glu Phe Phe Cys Pro Glu
1 5 10 15

His Ser Glu Cys Ile Cys His Ile Cys Leu Val Glu His Lys Thr Cys
20 25 30

Ser Pro Ala Ser Leu Ser Gln Ala Ser Ala Asp Leu Glu Ala Thr Leu
35 40 45

Arg His Lys Leu Thr Val Met Tyr Ser Gln Ile Asn Gly Ala Ser Arg
50 55 60

Ala Leu Asp Asp Val Arg Asn Arg Gln Gln Asp Val Arg Met Thr Ala
65 70 75 80

Asn Arg Lys Val Glu Gln Leu Gln Gln Glu Tyr Thr Glu Met Lys Ala
85 90 95

Leu Leu Asp Ala Ser Glu Thr Thr Ser Thr Arg Lys Ile Lys Glu Glu
100 105 110

Glu Lys Arg Val Asn Ser Lys Phe Asp Thr Ile Tyr Gln Ile Leu Leu
115 120 125

Lys Lys Lys Ser Glu Ile Gln Thr Leu Lys Glu Glu Ile Glu Gln Ser
130 135 140

Leu Thr Lys Arg Asp Glu Phe Glu Phe Leu Glu Lys Ala Ser Lys Leu
145 150 155 160

Arg Gly Ile Ser Thr Lys Pro Val Tyr Ile Pro Glu Val Glu Leu Asn
165 170 175

His Lys Leu Ile Lys Gly Ile His Gln Ser Thr Ile Asp Leu Lys Asn
180 185 190

Glu Leu Lys Gln Cys Ile Gly Arg Leu Gln Glu Leu Thr Pro Ser Ser
195 200 205

Gly Asp Pro Gly Glu His Asp Pro Ala Ser Thr His Lys Ser Thr Arg
210 215 220

Pro Val Lys Lys Val Ser Lys Glu Glu Lys Lys Ser Lys Lys Pro Pro
225 230 235 240

Pro Val Pro Ala Leu Pro Ser Lys Leu Pro Thr Phe Gly Ala Pro Glu
245 250 255

Gln Leu Val Asp Leu Lys Gln Ala Gly Leu Glu Ala Ala Ala Lys Ala
260 265 270

Thr Ser Ser His Pro Asn Ser Thr Ser Leu Lys Ala Lys Val Leu Glu
275 280 285

Thr Phe Leu Ala Lys Ser Arg Pro Glu Leu Leu Glu Tyr Tyr Ile Lys

290 295 300

Val Ile Leu Asp Tyr Asn Thr Ala His Asn Lys Val Ala Leu Ser Glu
305 310 315 320

Cys Tyr Thr Val Ala Ser Val Ala Glu Met Pro Gln Asn Tyr Arg Pro
325 330 335

His Pro Gln Arg Phe Thr Tyr Cys Ser Gln Val Leu Gly Leu His Cys
340 345 350

Tyr Lys Lys Gly Ile His Tyr Trp Glu Val Glu Leu Gln Lys Asn Asn
355 360 365

Phe Cys Gly Val Gly Ile Cys Tyr Gly Ser Met Asn Arg Gln Gly Pro
370 375 380

Glu Ser Arg Leu Gly Arg Asn Ser Ala Ser Trp Cys Val Glu Trp Phe
385 390 395 400

Asn Thr Lys Ile Ser Ala Trp His Asn Asn Val Glu Lys Thr Leu Pro
405 410 415

Ser Thr Lys Ala Thr Arg Val Gly Val Leu Leu Asn Cys Asp His Gly
420 425 430

Phe Val Ile Phe Phe Ala Val Ala Asp Lys Val His Leu Met Tyr Lys
435 440 445

Phe Arg Val Asp Phe Thr Glu Ala Leu Tyr Pro Ala Phe Trp Val Phe
450 455 460

Ser Ala Gly Ala Thr Leu Ser Ile Cys Ser Pro Lys
465 470 475

<210> 287

<211> 897

<212> PRT

<213> Shigella Flexneri

<400> 287

Met Glu Gln Leu Ala Asp Val Thr Leu Arg Arg Leu Leu Asp Asn Glu
1 5 10 15

Val Phe Asp Leu Asp Pro Asp Leu Gln Glu Pro Ser Gln Ile Thr Lys
20 25 30

Arg Asp Leu Glu Ala Arg Ala Gln Asn Glu Phe Phe Arg Ala Phe Phe
35 40 45

Arg Leu Pro Arg Lys Glu Lys Leu His Ala Val Val Asp Cys Ser Leu
50 55 60

Trp Thr Pro Phe Ser Arg Cys His Thr Ala Gly Arg Met Phe Ala Ser
65 70 75 80

Asp Ser Tyr Ile Cys Phe Ala Ser Arg Glu Asp Gly Cys Cys Lys Ile
85 90 95

Ile Leu Pro Leu Arg Glu Val Val Ser Ile Glu Lys Met Glu Asp Thr
100 105 110

Ser Leu Leu Pro His Pro Ile Ile Val Ser Ile Arg Ser Lys Val Ala
115 120 125

Phe Gln Phe Ile Glu Leu Arg Asp Arg Asp Ser Leu Val Glu Ala Leu
130 135 140

Leu Ala Arg Leu Lys Gln Val His Ala Asn His Pro Val His Tyr Asp
145 150 155 160

Thr Ser Ala Asp Asp Asp Met Ala Ser Leu Val Phe His Ser Thr Ser
165 170 175

Met Cys Ser Asp His Arg Phe Gly Asp Leu Glu Met Met Ser Ser Gln
180 185 190

Asn Ser Glu Glu Ser Glu Lys Glu Lys Ser Pro Leu Met His Pro Asp
195 200 205

Ala Leu Val Thr Ala Phe Gln Gln Ser Gly Ser Gln Ser Pro Asp Ser
210 215 220

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Arg Met Ser Arg Glu Gln Ile Lys Ile Ser Leu Trp Asn Asp His Phe
225                 230                 235                 240

Val Glu Tyr Gly Arg Thr Val Cys Met Phe Arg Thr Glu Lys Ile Arg
                245                 250                 255

Lys Leu Val Ala Met Gly Ile Pro Glu Ser Leu Arg Gly Arg Leu Trp
            260                 265                 270

Leu Leu Phe Ser Asp Ala Val Thr Asp Leu Ala Ser His Pro Gly Tyr
        275                 280                 285

Tyr Gly Asn Leu Val Glu Glu Ser Leu Gly Lys Cys Cys Leu Val Thr
    290                 295                 300

Glu Glu Ile Glu Arg Asp Leu His Arg Ser Leu Pro Glu His Pro Ala
305                 310                 315                 320

Phe Gln Asn Glu Thr Gly Ile Ala Ala Leu Arg Arg Val Leu Thr Ala
                325                 330                 335

Tyr Ala His Arg Asn Pro Lys Ile Gly Tyr Cys Gln Ser Met Asn Ile
            340                 345                 350

Leu Thr Ser Val Leu Leu Leu Tyr Thr Lys Glu Glu Glu Ala Phe Trp
        355                 360                 365

Leu Leu Val Ala Val Cys Glu Arg Met Leu Pro Asp Tyr Phe Asn His
    370                 375                 380

Arg Val Ile Gly Ala Gln Val Asp Gln Ser Val Phe Glu Glu Leu Ile
385                 390                 395                 400

Lys Gly His Leu Pro Glu Leu Ala Glu His Met Asn Asp Leu Ser Ala
                405                 410                 415

Leu Ala Ser Val Ser Leu Ser Trp Phe Leu Thr Leu Phe Leu Ser Ile
            420                 425                 430

Met Pro Leu Glu Ser Ala Val Asn Val Val Asp Cys Phe Phe Tyr Asp
        435                 440                 445
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Gly Ile Lys Ala Ile Phe Gln Leu Gly Leu Ala Val Leu Glu Ala Asn
450 455 460

Ala Glu Asp Leu Cys Ser Ser Lys Asp Asp Gly Gln Ala Leu Met Ile
465 470 475 480

Leu Ser Arg Phe Leu Asp His Ile Lys Asn Glu Asp Ser Pro Gly Pro
485 490 495

Pro Val Gly Ser His His Ala Phe Phe Ser Asp Asp Gln Glu Pro Tyr
500 505 510

Pro Val Thr Asp Ile Ser Asp Leu Ile Arg Asp Ser Tyr Glu Lys Phe
515 520 525

Gly Asp Gln Ser Val Glu Gln Ile Glu His Leu Arg Tyr Lys His Arg
530 535 540

Ile Arg Val Leu Gln Gly His Glu Asp Thr Thr Lys Gln Asn Val Leu
545 550 555 560

Arg Val Val Ile Pro Glu Val Ser Ile Leu Pro Glu Asp Leu Glu Glu
565 570 575

Leu Tyr Asp Leu Phe Lys Arg Glu His Met Met Ser Cys Tyr Trp Glu
580 585 590

Gln Pro Arg Pro Met Ala Ser Arg His Asp Pro Ser Arg Pro Tyr Ala
595 600 605

Glu Gln Tyr Arg Ile Asp Ala Arg Gln Phe Ala His Leu Phe Gln Leu
610 615 620

Val Ser Pro Trp Thr Cys Gly Ala His Thr Glu Ile Leu Ala Glu Arg
625 630 635 640

Thr Phe Arg Leu Leu Asp Asp Asn Met Asp Gln Leu Ile Glu Phe Lys
645 650 655

Ala Phe Val Ser Cys Leu Asp Ile Met Tyr Asn Gly Glu Met Asn Glu
660 665 670

Lys Ile Lys Leu Leu Tyr Arg Leu His Ile Pro Pro Ala Leu Thr Glu

675 680 685

Asn Asp Arg Asp Ser Gln Ser Pro Leu Arg Asn Pro Leu Leu Ser Thr
690 695 700

Ser Arg Pro Leu Val Phe Gly Lys Pro Asn Gly Asp Ala Val Asp Tyr
705 710 715 720

Gln Lys Gln Leu Lys Gln Met Ile Lys Asp Leu Ala Lys Glu Lys Asp
725 730 735

Lys Thr Glu Lys Glu Leu Pro Lys Met Ser Gln Arg Glu Phe Ile Gln
740 745 750

Phe Cys Lys Thr Leu Tyr Ser Met Phe His Glu Asp Pro Glu Glu Asn
755 760 765

Asp Leu Tyr Gln Ala Ile Ala Thr Val Thr Thr Leu Leu Leu Gln Ile
770 775 780

Gly Glu Val Gly Gln Arg Gly Ser Ser Ser Gly Ser Cys Ser Gln Glu
785 790 795 800

Cys Gly Glu Glu Leu Arg Ala Ser Ala Pro Ser Pro Glu Asp Ser Val
805 810 815

Phe Ala Asp Thr Gly Lys Thr Pro Gln Asp Ser Gln Ala Leu Pro Glu
820 825 830

Ala Ala Glu Arg Asp Trp Thr Val Ser Leu Glu His Ile Leu Ala Ser
835 840 845

Leu Leu Thr Glu Gln Ser Leu Val Asn Phe Phe Glu Lys Pro Leu Asp
850 855 860

Met Lys Ser Lys Leu Glu Asn Ala Lys Ile Asn Gln Tyr Asn Leu Lys
865 870 875 880

Thr Phe Glu Met Ser His Gln Ser Gln Ser Glu Leu Lys Leu Ser Asn
885 890 895

Leu

<210> 288

<211> 219

<212> PRT

<213> Shigella Flexneri

<400> 288

Leu Pro Asp Pro Leu Gln Glu Pro Tyr Tyr Gln Pro Pro Tyr Thr Leu
1 5 10 15

Val Leu Glu Leu Thr Gly Val Leu Leu His Pro Glu Trp Ser Leu Ala
20 25 30

Thr Gly Trp Arg Phe Lys Lys Arg Pro Gly Ile Glu Thr Leu Phe Gln
35 40 45

Gln Leu Ala Pro Leu Tyr Glu Ile Val Ile Phe Thr Ser Glu Thr Gly
50 55 60

Met Thr Ala Phe Pro Leu Ile Asp Ser Val Asp Pro His Gly Phe Ile
65 70 75 80

Ser Tyr Arg Leu Phe Arg Asp Ala Thr Arg Tyr Met Asp Gly His His
85 90 95

Val Lys Asp Ile Ser Cys Leu Asn Arg Asp Pro Ala Arg Val Val Val
100 105 110

Val Asp Cys Lys Lys Glu Ala Phe Arg Leu Gln Pro Tyr Asn Gly Val
115 120 125

Ala Leu Arg Pro Trp Asp Gly Asn Ser Asp Asp Arg Val Leu Leu Asp
130 135 140

Leu Ser Ala Phe Leu Lys Thr Ile Ala Leu Asn Gly Val Glu Asp Val
145 150 155 160

Arg Thr Val Leu Glu His Tyr Ala Leu Glu Asp Asp Pro Leu Ala Ala
165 170 175

Phe Lys Gln Arg Gln Ser Arg Leu Glu Gln Glu Glu Gln Gln Arg Leu
180 185 190

Ala Glu Leu Ser Lys Ser Asn Lys Gln Asn Leu Phe Leu Gly Ser Leu
195 200 205

Thr Ser Arg Leu Trp Pro Arg Ser Lys Gln Pro
210 215

<210> 289

<211> 28

<212> PRT

<213> Shigella Flexneri

<220>

<221> MISC_FEATURE

<222> (9)..(12)

<223> MISC_FEATURE

<220>

<221> MISC_FEATURE

<222> (14)..(18)

<223> MISC_FEATURE

<220>

<221> MISC_FEATURE

<222> (20)..(24)

<223> MISC_FEATURE

<400> 289

Trp Gly Val Gly Met Gly Phe Val Xaa Xaa Xaa Xaa Phe Xaa Xaa Xaa
1 5 10 15

Xaa Xaa Trp Xaa Xaa Xaa Xaa Xaa Leu Leu Trp Thr
20 25

<210> 290

<211> 341

<212> PRT

<213> Shigella Flexneri

<400> 290

Ser His Asn Ser Leu Arg Gly Ala Arg Pro Gln Asp Pro Ser Glu Glu
1 5 10 15

Gly Pro Gly Asp Phe Gly Phe Leu His Ala Ser Ser Ser Ile Glu Ser
20 25 30

Glu Ala Lys Pro Ala Gln Pro Gln Pro Thr Gly Glu Lys Glu Gln Asp
35 40 45

Lys Ser Lys Thr Leu Ser Leu Glu Glu Ala Val Thr Ser Ile Gln Gln
50 55 60

Leu Phe Gln Leu Ser Val Ser Ile Ala Phe Asn Phe Leu Gly Thr Glu
65 70 75 80

Asn Met Lys Ser Gly Asp His Thr Ala Ala Phe Ser Tyr Phe Gln Lys
85 90 95

Ala Ala Ala Arg Gly Tyr Ser Lys Ala Gln Tyr Asn Ala Gly Leu Cys
100 105 110

His Glu His Gly Arg Gly Thr Pro Arg Asp Ile Ser Lys Ala Val Leu
115 120 125

Tyr Tyr Gln Leu Ala Ala Ser Gln Gly His Ser Leu Ala Gln Tyr Arg
130 135 140

Tyr Ala Arg Cys Leu Leu Arg Asp Pro Ala Ser Ser Trp Asn Pro Glu
145 150 155 160

Arg Gln Arg Ala Val Ser Leu Leu Lys Gln Ala Ala Asp Ser Gly Leu
165 170 175

Arg Glu Ala Gln Ala Phe Leu Gly Val Leu Phe Thr Lys Glu Pro Tyr
180 185 190

Leu Asp Glu Gln Arg Ala Val Lys Tyr Leu Trp Leu Ala Ala Asn Asn
195 200 205

Gly Asp Ser Gln Ser Arg Tyr His Leu Gly Ile Cys Tyr Glu Lys Gly
210 215 220

Leu Gly Val Gln Arg Asn Leu Gly Glu Ala Leu Arg Cys Tyr Gln Gln
225 230 235 240

Ser Ala Ala Leu Gly Asn Glu Ala Ala Gln Glu Arg Leu Arg Ala Leu
245 250 255

Phe Ser Met Gly Ala Ala Ala Pro Gly Pro Ser Asp Leu Thr Val Thr
260 265 270

Gly Leu Lys Ser Phe Ser Ser Pro Ser Leu Cys Ser Leu Asn Thr Leu
275 280 285

Leu Ala Gly Thr Ser Arg Leu Pro His Ala Ser Ser Thr Gly Asn Leu
290 295 300

Gly Leu Leu Cys Arg Ser Gly His Leu Gly Ala Ser Leu Glu Ala Ser
305 310 315 320

Ser Arg Ala Ile Pro Pro His Pro Tyr Pro Leu Glu Arg Ser Val Val
325 330 335

Arg Leu Gly Phe Gly
340

<210> 291

<211> 21

<212> PRT

<213> Shigella Flexneri

<220>

<221> MISC_FEATURE

<222> (1)..(15)

<223> MISC_FEATURE

<400> 291

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Ser
1 5 10 15

Leu Cys Ile Phe Phe
20

<210> 292

<211> 507

<212> PRT

<213> Shigella Flexneri

<400> 292

Asp Pro Val Ser Val Asp Thr Ala Arg Leu Glu His Leu Phe Glu Ser
1 5 10 15

Arg Ala Lys Glu Val Leu Pro Ser Lys Lys Ala Gly Glu Gly Arg Arg
20 25 30

Thr Met Thr Thr Val Leu Asp Pro Lys Arg Thr Asn Ala Ile Asn Ile
35 40 45

Gly Leu Thr Thr Leu Pro Pro Val His Val Ile Lys Ala Ala Leu Leu
50 55 60

Asn Phe Asp Glu Phe Ala Val Ser Lys Asp Gly Ile Glu Lys Leu Leu
65 70 75 80

Thr Met Met Pro Thr Glu Glu Glu Arg Gln Lys Ile Glu Gly Ala Gln
85 90 95

Leu Ala Asn Pro Asp Ile Pro Leu Gly Pro Ala Glu Asn Phe Leu Met
100 105 110

Thr Leu Ala Ser Ile Gly Gly Leu Ala Ala Arg Leu Gln Leu Trp Ala
115 120 125

Phe Lys Leu Asp Tyr Asp Ser Met Glu Arg Glu Ile Ala Glu Pro Leu
130 135 140

Phe Asp Leu Lys Val Gly Met Glu Gln Leu Val Gln Asn Ala Thr Phe
145 150 155 160

Arg Cys Ile Leu Ala Thr Leu Leu Ala Val Gly Asn Phe Leu Asn Gly
165 170 175

Ser Gln Ser Ser Gly Phe Glu Leu Ser Tyr Leu Glu Lys Val Ser Asp
180 185 190

Val Lys Asp Thr Val Arg Arg Gln Ser Leu Leu His His Leu Cys Ser
195 200 205

Leu Val Leu Gln Thr Arg Pro Glu Ser Ser Asp Leu Tyr Ser Glu Ile
210 215 220

Pro Ala Leu Thr Arg Cys Ala Lys Val Asp Phe Glu Gln Leu Thr Glu
225 230 235 240

Asn Leu Gly Gln Leu Glu Arg Arg Ser Arg Ala Ala Glu Glu Ser Leu
245 250 255

Arg Ser Leu Ala Lys His Glu Leu Ala Pro Ala Leu Arg Ala Arg Leu
260 265 270

Thr His Phe Leu Asp Gln Cys Ala Arg Arg Val Ala Met Leu Arg Ile
275 280 285

Val His Arg Arg Val Cys Asn Arg Phe His Ala Phe Leu Leu Tyr Leu
290 295 300

Gly Tyr Thr Pro Gln Ala Ala Arg Glu Val Arg Ile Met Gln Phe Cys
305 310 315 320

His Thr Leu Arg Glu Phe Ala Leu Glu Tyr Arg Thr Cys Arg Glu Arg
325 330 335

Val Leu Gln Gln Gln Gln Lys Gln Ala Thr Tyr Arg Glu Arg Asn Lys
340 345 350

Thr Arg Gly Arg Met Ile Thr Glu Thr Glu Lys Phe Ser Gly Val Ala
355 360 365

Gly Glu Ala Pro Ser Asn Pro Ser Val Pro Val Ala Val Ser Ser Gly
370 375 380

Pro Gly Arg Gly Asp Ala Asp Ser His Ala Ser Met Lys Ser Leu Leu
385 390 395 400

Thr Ser Arg Leu Glu Asp Thr Thr His Asn Arg Arg Ser Arg Gly Met
405 410 415

Val Gln Ser Ser Ser Pro Ile Met Pro Thr Val Gly Pro Ser Thr Ala
420 425 430

Ser Pro Glu Glu Pro Pro Gly Ser Ser Leu Pro Ser Asp Thr Ser Asp
435 440 445

Glu Ile Met Asp Leu Leu Val Gln Ser Val Thr Lys Ser Ser Pro Arg
450 455 460

Ala Leu Ala Ala Arg Glu Arg Lys Arg Ser Arg Gly Asn Arg Lys Ser
465 470 475 480

Leu Arg Arg Thr Leu Lys Ser Gly Leu Gly Asp Asp Leu Val Gln Ala
485 490 495

Leu Gly Leu Ser Lys Gly Pro Gly Leu Glu Val
500 505

<210> 293

<211> 315

<212> PRT

<213> Shigella Flexneri

<400> 293

Gln Glu Ala Gln Ser Ile Asp Glu Ile Tyr Lys Tyr Asp Lys Lys Gln
1 5 10 15

Gln Gln Glu Ile Leu Ala Ala Lys Pro Trp Thr Lys Asp His His Tyr
20 25 30

Phe Lys Tyr Cys Lys Ile Ser Ala Leu Ala Leu Leu Lys Met Val Met
35 40 45

His Ala Arg Ser Gly Gly Asn Leu Glu Val Met Gly Leu Met Leu Gly
50 55 60

Lys Val Asp Gly Glu Thr Met Ile Ile Met Asp Ser Phe Ala Leu Pro
65 70 75 80

Val Glu Gly Thr Glu Thr Arg Val Asn Ala Gln Ala Ala Ala Tyr Glu
85 90 95

Tyr Met Ala Ala Tyr Ile Glu Asn Ala Lys Gln Val Gly Arg Leu Glu
100 105 110

Asn Ala Ile Gly Trp Tyr His Ser His Pro Gly Tyr Gly Cys Trp Leu
115 120 125

Ser Gly Ile Asp Val Ser Thr Gln Met Leu Asn Gln Gln Phe Gln Glu
130 135 140

Pro Phe Val Ala Val Val Ile Asp Pro Thr Arg Thr Ile Ser Ala Gly
145 150 155 160

Lys Val Asn Leu Gly Ala Phe Arg Thr Tyr Pro Lys Gly Tyr Lys Pro
165 170 175

Pro Asp Glu Gly Pro Ser Glu Tyr Gln Thr Ile Pro Leu Asn Lys Ile
180 185 190

Glu Asp Phe Gly Val His Cys Lys Gln Tyr Tyr Ala Leu Glu Val Ser
195 200 205

Tyr Phe Lys Ser Ser Leu Asp Arg Lys Leu Leu Glu Leu Leu Trp Asn
210 215 220

Lys Tyr Trp Val Asn Thr Leu Ser Ser Ser Ser Leu Leu Thr Asn Ala
225 230 235 240

Asp Tyr Thr Thr Gly Gln Val Phe Asp Leu Ser Glu Lys Leu Glu Gln
245 250 255

Ser Glu Ala Gln Leu Gly Arg Gly Ser Phe Met Leu Gly Leu Glu Thr
260 265 270

His Asp Arg Lys Ser Glu Asp Lys Leu Ala Lys Ala Thr Arg Asp Ser
275 280 285

Cys Lys Thr Thr Ile Glu Ala Ile His Gly Leu Met Ser Gln Val Ile
290 295 300

Lys Asp Lys Leu Phe Asn Gln Ile Asn Ile Ser
305 310 315

<210> 294

<211> 11

<212> PRT

<213> Shigella Flexneri

<400> 294

Leu Gly His Leu Gly Arg Ser Phe Gly Phe Leu
1 5 10

<210> 295

<211> 50

<212> PRT

<213> Shigella Flexneri

<220>

<221> MISC_FEATURE

<222> (15)..(49)

<223> MISC_FEATURE

<400> 295

Ala Asn Met Val Ala Ile Asp Ser Leu Leu Cys Ile Arg Ser Xaa Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
20 25 30

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
35 40 45

Xaa Glu
50

<210> 296

<211> 494

<212> PRT

<213> Shigella Flexneri

<400> 296

Gly Glu Arg Thr Glu Cys Ala Glu Pro Pro Arg Asp Glu Pro Pro Ala
1 5 10 15

Asp Gly Ala Leu Lys Arg Ala Glu Glu Leu Lys Thr Gln Ala Asn Asp
20 25 30

Tyr Phe Lys Ala Lys Asp Tyr Glu Asn Ala Ile Lys Phe Tyr Ser Gln
35 40 45

Ala Ile Glu Leu Asn Pro Ser Asn Ala Ile Tyr Tyr Gly Asn Arg Ser
50 55 60

Leu Ala Tyr Leu Arg Thr Glu Cys Tyr Gly Tyr Ala Leu Gly Asp Ala
65 70 75 80

Thr Arg Ala Ile Glu Leu Asp Lys Lys Tyr Ile Lys Gly Tyr Tyr Arg
85 90 95

Arg Ala Ala Ser Asn Met Ala Leu Gly Lys Phe Arg Ala Ala Leu Arg
100 105 110

Asp Tyr Glu Thr Val Val Lys Val Lys Pro His Asp Lys Asp Ala Lys
115 120 125

Met Lys Tyr Gln Glu Cys Asn Lys Ile Val Lys Gln Lys Ala Phe Glu
130 135 140

Arg Ala Ile Ala Gly Asp Glu His Lys Arg Ser Val Val Asp Ser Leu
145 150 155 160

Asp Ile Glu Ser Met Thr Ile Glu Asp Glu Tyr Ser Gly Pro Lys Leu
165 170 175

Glu Asp Gly Lys Val Thr Ile Ser Phe Met Lys Glu Leu Met Gln Trp
180 185 190

Tyr Lys Asp Gln Lys Lys Leu His Arg Lys Cys Ala Tyr Gln Ile Leu
195 200 205

Val Gln Val Lys Glu Val Leu Ser Lys Leu Ser Thr Leu Val Glu Thr
210 215 220

Thr Leu Lys Glu Thr Glu Lys Ile Thr Val Cys Gly Asp Thr His Gly
225 230 235 240

Gln Phe Tyr Asp Leu Leu Asn Ile Phe Glu Leu Asn Gly Leu Pro Ser
245 250 255

Glu Thr Asn Pro Tyr Ile Phe Asn Gly Asp Phe Val Asp Arg Gly Ser
260 265 270

Phe Ser Val Glu Val Ile Leu Thr Leu Phe Gly Phe Lys Leu Leu Tyr
275 280 285

Pro Asp His Phe His Leu Leu Arg Gly Asn His Glu Thr Asp Asn Met
290 295 300

Asn Gln Ile Tyr Gly Phe Glu Gly Glu Val Lys Ala Lys Tyr Thr Ala
305 310 315 320

Gln Met Tyr Glu Leu Phe Ser Glu Val Phe Glu Trp Leu Pro Leu Ala
325 330 335

Gln Cys Ile Asn Gly Lys Val Leu Ile Met His Gly Gly Leu Phe Ser
340 345 350

Glu Asp Gly Val Thr Leu Asp Asp Ile Arg Lys Ile Glu Arg Asn Arg
355 360 365

Gln Pro Pro Asp Ser Gly Pro Met Cys Asp Leu Leu Trp Ser Asp Pro
370 375 380

Gln Pro Gln Asn Gly Arg Ser Ile Ser Lys Arg Gly Val Ser Cys Gln
385 390 395 400

Phe Gly Pro Asp Val Thr Lys Ala Phe Leu Glu Glu Asn Asn Leu Asp
405 410 415

Tyr Ile Ile Arg Ser His Glu Val Lys Ala Glu Gly Tyr Glu Val Ala
420 425 430

His Gly Gly Arg Cys Val Thr Val Phe Ser Ala Pro Asn Tyr Cys Asp
435 440 445

Gln Met Gly Asn Lys Ala Ser Tyr Ile His Leu Gln Gly Ser Asp Leu
450 455 460

Arg Pro Gln Phe His Gln Phe Thr Ala Val Pro His Pro Asn Val Lys
465 470 475 480

Pro Met Ala Tyr Ala Asn Thr Leu Leu Gln Leu Gly Met Met
485 490

<210> 297

<211> 98

<212> PRT

<213> Shigella Flexneri

<400> 297

Leu Thr Ser Glu Ile Pro Gln Leu Asn Asp Trp Arg Leu Ser Pro Thr
1 5 10 15

His Ser Arg His Cys Gln Glu Arg Leu Lys Thr Ser Gly Asp His Phe
20 25 30

Phe Ser Lys Gln Phe Phe Arg Trp Ile Leu Thr Leu Ser Leu Arg Leu
35 40 45

Glu Cys Ser Gly Ala Val Ser Ala His Tyr Thr Leu Pro Leu Leu Ala
50 55 60

Pro Ala Arg Met Tyr Phe Ser Phe Ser Pro Cys Leu Leu Cys Arg Asp
65 70 75 80

His Ser Leu Cys Pro Cys Ile His Val Gly His Gln Ser His Gln Ser
85 90 95

Thr Lys

<210> 298

<211> 319

<212> PRT

<213> Shigella Flexneri

<400> 298

Ala Val Leu Arg Gly Asp Ala Glu Ala Val Lys Gly Ile Gly Ser Gly
1 5 10 15

Lys Val Leu Lys Ser Gly Pro Gln Asp His Val Phe Ile Tyr Phe Thr
20 25 30

Asp His Gly Ser Thr Gly Ile Leu Val Phe Pro Asn Glu Asp Leu His
35 40 45

Val Lys Asp Leu Asn Glu Thr Ile His Tyr Met Tyr Lys His Lys Met
50 55 60

Tyr Arg Lys Met Val Phe Tyr Ile Glu Ala Cys Glu Ser Gly Ser Met

65 70 75 80

Met Asn His Leu Pro Asp Asn Ile Asn Val Tyr Ala Thr Thr Ala Ala
85 90 95

Asn Pro Arg Glu Ser Ser Tyr Ala Cys Tyr Tyr Asp Glu Lys Arg Ser
100 105 110

Thr Tyr Leu Gly Asp Trp Tyr Ser Val Asn Trp Met Glu Asp Ser Asp
115 120 125

Val Glu Asp Leu Thr Lys Glu Thr Leu His Lys Gln Tyr His Leu Val
130 135 140

Lys Ser His Thr Asn Thr Ser His Val Met Gln Tyr Gly Asn Lys Thr
145 150 155 160

Ile Ser Thr Met Lys Val Met Gln Phe Gln Gly Met Lys Arg Lys Ala
165 170 175

Ser Ser Pro Val Pro Leu Pro Pro Val Thr His Leu Asp Leu Thr Pro
180 185 190

Ser Pro Asp Val Pro Leu Thr Ile Met Lys Arg Lys Leu Met Asn Thr
195 200 205

Asn Asp Leu Glu Glu Ser Arg Gln Leu Thr Glu Glu Ile Gln Arg His
210 215 220

Leu Asp Ala Arg His Leu Ile Glu Lys Ser Val Arg Lys Ile Val Ser
225 230 235 240

Leu Leu Ala Ala Ser Glu Ala Glu Val Glu Gln Leu Leu Ser Glu Arg
245 250 255

Ala Pro Leu Thr Gly His Ser Cys Tyr Pro Glu Ala Leu Leu His Phe
260 265 270

Arg Thr His Cys Phe Asn Trp His Ser Pro Thr Tyr Glu Tyr Ala Leu
275 280 285

Arg His Leu Tyr Val Leu Val Asn Leu Cys Glu Lys Pro Tyr Pro Leu
290 295 300

His Arg Ile Lys Leu Ser Met Asp His Val Cys Leu Gly His Tyr
305 310 315

<210> 299

<211> 289

<212> PRT

<213> Shigella Flexneri

<400> 299

Thr Lys Asp His His Tyr Phe Lys Tyr Cys Lys Ile Ser Ala Leu Ala
1 5 10 15

Leu Leu Lys Met Val Met His Ala Arg Ser Gly Gly Asn Leu Glu Val
20 25 30

Met Gly Leu Met Leu Gly Lys Val Asp Gly Glu Thr Met Ile Ile Met
35 40 45

Asp Ser Phe Ala Leu Pro Val Glu Gly Thr Glu Thr Arg Val Asn Ala
50 55 60

Gln Ala Ala Ala Tyr Glu Tyr Met Ala Ala Tyr Ile Glu Asn Ala Lys
65 70 75 80

Gln Val Gly Arg Leu Glu Asn Ala Ile Gly Trp Tyr His Ser His Pro
85 90 95

Gly Tyr Gly Cys Trp Leu Ser Gly Ile Asp Val Ser Thr Gln Met Leu
100 105 110

Asn Gln Gln Phe Gln Glu Pro Phe Val Ala Val Val Ile Asp Pro Thr
115 120 125

Arg Thr Ile Ser Ala Gly Lys Val Asn Leu Gly Ala Phe Arg Thr Tyr
130 135 140

Pro Lys Gly Tyr Lys Pro Pro Asp Glu Gly Pro Ser Glu Tyr Gln Thr
145 150 155 160

Ile Pro Leu Asn Lys Ile Glu Asp Phe Gly Val His Cys Lys Gln Tyr
165 170 175

Tyr Ala Leu Glu Val Ser Tyr Phe Lys Ser Ser Leu Asp Arg Lys Leu
180 185 190

Leu Glu Leu Leu Trp Asn Lys Tyr Trp Val Asn Thr Leu Ser Ser Ser
195 200 205

Ser Leu Leu Thr Asn Ala Asp Tyr Thr Thr Gly Gln Val Phe Asp Leu
210 215 220

Ser Glu Lys Leu Glu Gln Ser Glu Ala Gln Leu Gly Arg Gly Ser Phe
225 230 235 240

Met Leu Gly Leu Glu Thr His Asp Arg Lys Ser Glu Asp Lys Leu Ala
245 250 255

Lys Ala Thr Arg Asp Ser Cys Lys Thr Thr Ile Glu Ala Ile His Gly
260 265 270

Leu Met Ser Gln Val Ile Lys Asp Lys Leu Phe Asn Gln Ile Asn Ile
275 280 285

Ser

<210> 300

<211> 1094

<212> PRT

<213> Shigella Flexneri

<400> 300

Gly Asn Lys Ala Cys Ser Pro Cys Ser Ser Gln Ser Ser Ser Ser Gly
1 5 10 15

Ile Cys Thr Asp Phe Trp Asp Leu Leu Val Lys Leu Asp Asn Met Asn
20 25 30

```
Val Ser Arg Lys Gly Lys Asn Ser Val Lys Ser Val Pro Val Ser Ala
        35                  40                  45

Gly Gly Glu Gly Glu Thr Ser Pro Tyr Ser Leu Glu Ala Ser Pro Leu
    50                  55                  60

Gly Gln Leu Met Asn Met Leu Ser His Pro Val Ile Arg Arg Ser Ser
65                  70                  75                  80

Leu Leu Thr Glu Lys Leu Leu Arg Leu Leu Ser Leu Ile Ser Ile Ala
                85                  90                  95

Leu Pro Glu Asn Lys Val Ser Glu Ala Gln Ala Asn Ser Gly Ser Gly
            100                 105                 110

Ala Ser Ser Thr Thr Thr Ala Thr Ser Thr Thr Ser Thr Thr Thr Thr
        115                 120                 125

Thr Ala Ala Ser Thr Thr Pro Thr Pro Pro Thr Ala Pro Thr Pro Val
    130                 135                 140

Thr Ser Ala Pro Ala Leu Val Ala Ala Thr Ala Ile Ser Thr Ile Val
145                 150                 155                 160

Val Ala Ala Ser Thr Thr Val Thr Thr Pro Thr Thr Ala Thr Thr Thr
                165                 170                 175

Val Ser Ile Ser Pro Thr Thr Lys Gly Ser Lys Ser Pro Ala Lys Val
            180                 185                 190

Ser Asp Gly Gly Ser Ser Ser Thr Asp Phe Lys Met Val Ser Ser Gly
        195                 200                 205

Leu Thr Glu Asn Gln Leu Gln Leu Ser Val Glu Val Leu Thr Ser His
    210                 215                 220

Ser Cys Ser Glu Glu Gly Leu Glu Asp Ala Ala Asn Val Leu Leu Gln
225                 230                 235                 240

Leu Ser Arg Gly Asp Ser Gly Thr Arg Asp Thr Val Leu Lys Leu Leu
                245                 250                 255

Leu Asn Gly Ala Arg His Leu Gly Tyr Thr Leu Cys Lys Gln Ile Gly
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260 265 270

Thr Leu Leu Ala Glu Leu Arg Glu Tyr Asn Leu Glu Gln Gln Arg Arg
275 280 285

Ala Gln Cys Glu Thr Leu Ser Pro Asp Gly Leu Pro Glu Glu Gln Pro
290 295 300

Gln Thr Thr Lys Leu Lys Gly Lys Met Gln Ser Arg Phe Asp Met Ala
305 310 315 320

Glu Asn Val Val Ile Val Ala Ser Gln Lys Arg Pro Leu Gly Gly Arg
325 330 335

Glu Leu Gln Leu Pro Ser Met Ser Met Leu Thr Ser Lys Thr Ser Thr
340 345 350

Gln Lys Phe Phe Leu Arg Val Leu Gln Val Ile Ile Gln Leu Arg Asp
355 360 365

Asp Thr Arg Arg Ala Asn Lys Lys Ala Lys Gln Thr Gly Arg Leu Gly
370 375 380

Ser Ser Gly Leu Gly Ser Ala Ser Ser Ile Gln Ala Ala Val Arg Gln
385 390 395 400

Leu Glu Ala Glu Ala Asp Ala Ile Ile Gln Met Val Arg Glu Gly Gln
405 410 415

Arg Ala Arg Arg Gln Gln Gln Ala Ala Thr Ser Glu Ser Ser Gln Ser
420 425 430

Glu Ala Ser Val Arg Arg Glu Glu Ser Pro Met Asp Val Asp Gln Pro
435 440 445

Ser Pro Ser Ala Gln Asp Thr Gln Ser Ile Ala Ser Asp Gly Thr Pro
450 455 460

Gln Gly Glu Lys Glu Lys Glu Glu Arg Pro Pro Glu Leu Pro Leu Leu
465 470 475 480

Ser Glu Gln Leu Ser Leu Asp Glu Leu Trp Asp Met Leu Gly Glu Cys
485 490 495

Leu Lys Glu Leu Glu Glu Ser His Asp Gln His Ala Val Leu Val Leu
500 505 510

Gln Pro Ala Val Glu Ala Phe Phe Leu Val His Ala Thr Glu Arg Glu
515 520 525

Ser Lys Pro Pro Val Arg Asp Thr Arg Glu Ser Gln Leu Ala His Ile
530 535 540

Lys Asp Glu Pro Pro Pro Leu Ser Pro Ala Pro Leu Thr Pro Ala Thr
545 550 555 560

Pro Ser Ser Leu Asp Pro Phe Phe Ser Arg Glu Pro Ser Ser Met His
565 570 575

Ile Ser Ser Ser Leu Pro Pro Asp Thr Gln Lys Phe Leu Arg Phe Ala
580 585 590

Glu Thr His Arg Thr Val Leu Asn Gln Ile Leu Arg Gln Ser Thr Thr
595 600 605

His Leu Ala Asp Gly Pro Phe Ala Val Leu Val Asp Tyr Ile Arg Val
610 615 620

Leu Asp Phe Asp Val Lys Arg Lys Tyr Phe Arg Gln Glu Leu Glu Arg
625 630 635 640

Leu Asp Glu Gly Leu Arg Lys Glu Asp Met Ala Val His Val Arg Arg
645 650 655

Asp His Val Phe Glu Asp Ser Tyr Arg Glu Leu His Arg Lys Ser Pro
660 665 670

Glu Glu Met Lys Asn Arg Leu Tyr Ile Val Phe Glu Gly Glu Glu Gly
675 680 685

Gln Asp Ala Gly Gly Leu Leu Arg Glu Trp Tyr Met Ile Ile Ser Arg
690 695 700

Glu Met Phe Asn Pro Met Tyr Ala Leu Phe Arg Thr Ser Pro Gly Asp
705 710 715 720

Arg Val Thr Tyr Thr Ile Asn Pro Ser Ser His Cys Asn Pro Asn His
725 730 735

Leu Ser Tyr Phe Lys Phe Val Gly Arg Ile Val Ala Lys Ala Val Tyr
740 745 750

Asp Asn Arg Leu Leu Glu Cys Tyr Phe Thr Arg Ser Phe Tyr Lys His
755 760 765

Ile Leu Gly Lys Ser Val Arg Tyr Thr Asp Met Glu Ser Glu Asp Tyr
770 775 780

His Phe Tyr Gln Gly Leu Val Tyr Leu Leu Glu Asn Asp Val Ser Thr
785 790 795 800

Leu Gly Tyr Asp Leu Thr Phe Ser Thr Glu Val Gln Glu Phe Gly Val
805 810 815

Cys Glu Val Arg Asp Leu Lys Pro Asn Gly Ala Asn Ile Leu Val Thr
820 825 830

Glu Glu Asn Lys Lys Glu Tyr Val His Leu Val Cys Gln Met Arg Met
835 840 845

Thr Gly Ala Ile Arg Lys Gln Leu Ala Ala Phe Leu Glu Gly Phe Tyr
850 855 860

Glu Ile Ile Pro Lys Arg Leu Ile Ser Ile Phe Thr Glu Gln Glu Leu
865 870 875 880

Glu Leu Leu Ile Ser Gly Leu Pro Thr Ile Asp Ile Asp Asp Leu Lys
885 890 895

Ser Asn Thr Glu Tyr His Lys Tyr Gln Ser Asn Ser Ile Gln Ile Gln
900 905 910

Trp Phe Trp Arg Ala Leu Arg Ser Phe Asp Gln Ala Asp Arg Ala Lys
915 920 925

Phe Leu Gln Phe Val Thr Gly Thr Ser Lys Val Pro Leu Gln Gly Phe
930 935 940

Ala Ala Leu Glu Gly Met Asn Gly Ile Gln Lys Phe Gln Ile His Arg
945 950 955 960

Asp Asp Arg Ser Thr Asp Arg Leu Pro Ser Ala His Thr Cys Phe Asn
965 970 975

Gln Leu Asp Leu Pro Ala Tyr Glu Ser Phe Glu Lys Ser Ala Thr Cys
980 985 990

Tyr Cys Trp Leu Ser Arg Ser Ala Leu Lys Ala Leu Gly Trp Pro Asn
995 1000 1005

Lys Ala Leu Pro Asn Ser Val Gly Phe Phe Leu Pro Leu Leu Asp
1010 1015 1020

Leu Gly Arg Gly Glu Leu Lys Lys Glu Pro Glu Arg Asn Cys Gln
1025 1030 1035

Lys Pro Ile Asn Glu Ile His Gln Leu Thr Val Cys Val Pro Ala
1040 1045 1050

Ala Pro Ser Ser Pro Ala His Thr Cys Ser Ser Ser His Ser Leu
1055 1060 1065

Pro Ala Ala Cys Phe Leu Thr Phe Ser Pro Leu Ser Met Pro Ser
1070 1075 1080

Met Ile Pro Thr Pro Cys Val Leu Lys Arg Gln
1085 1090

<210> 301

<211> 158

<212> PRT

<213> Shigella Flexneri

<400> 301

Thr Tyr Thr Pro Gly Asp Cys Pro Asn Phe Ala Ala Pro Arg Arg Glu
1 5 10 15

Val Ala Pro Pro Tyr Gln Gly Ala Asp Pro Ile Leu Ala Thr Ala Leu

20 25 30

Ala Ser Asp Pro Ile Pro Asn Pro Leu Gln Lys Trp Glu Asp Ser Ala
35 40 45

His Lys Pro Gln Ser Leu Asp Thr Asp Asp Pro Ala Thr Leu Tyr Ala
50 55 60

Val Val Glu Asn Val Pro Pro Leu Arg Trp Lys Glu Phe Val Arg Arg
65 70 75 80

Leu Gly Leu Ser Asp His Glu Ile Asp Arg Leu Glu Leu Gln Asn Gly
85 90 95

Arg Cys Leu Arg Glu Ala Gln Tyr Ser Met Leu Ala Thr Trp Arg Arg
100 105 110

Arg Thr Pro Arg Arg Glu Ala Thr Leu Glu Leu Leu Gly Arg Val Leu
115 120 125

Arg Asp Met Asp Leu Leu Gly Cys Leu Glu Asp Ile Glu Glu Ala Leu
130 135 140

Cys Gly Pro Ala Ala Leu Pro Pro Ala Pro Ser Leu Leu Arg
145 150 155

<210> 302

<211> 405

<212> PRT

<213> Shigella Flexneri

<400> 302

Ala Thr Arg Ser Ser Ala Val Arg Leu Arg Ser Ser Val Pro Gly Val
1 5 10 15

Arg Leu Leu Gln Asp Ser Val Asp Phe Ser Leu Ala Asp Ala Ile Asn
20 25 30

Thr Glu Phe Lys Asn Thr Arg Thr Asn Glu Lys Val Glu Leu Gln Glu
35 40 45

```
Leu Asn Asp Arg Phe Ala Asn Tyr Ile Asp Lys Val Arg Phe Leu Glu
    50                  55                  60

Gln Gln Asn Lys Ile Leu Leu Ala Glu Leu Glu Gln Leu Lys Gly Gln
65                  70                  75                  80

Gly Lys Ser Arg Leu Gly Asp Leu Tyr Glu Glu Glu Met Arg Glu Leu
                85                  90                  95

Arg Arg Gln Val Asp Gln Leu Thr Asn Asp Lys Ala Arg Val Glu Val
            100                 105                 110

Glu Arg Asp Asn Leu Ala Glu Asp Ile Met Arg Leu Arg Glu Lys Leu
        115                 120                 125

Gln Glu Glu Met Leu Gln Arg Glu Glu Ala Glu Asn Thr Leu Gln Ser
    130                 135                 140

Phe Arg Gln Asp Val Asp Asn Ala Ser Leu Ala Arg Leu Asp Leu Glu
145                 150                 155                 160

Arg Lys Val Glu Ser Leu Gln Glu Glu Ile Ala Phe Leu Lys Lys Leu
                165                 170                 175

His Glu Glu Glu Ile Gln Glu Leu Gln Ala Gln Ile Gln Glu Gln His
            180                 185                 190

Val Gln Ile Asp Val Asp Val Ser Lys Pro Asp Leu Thr Ala Ala Leu
        195                 200                 205

Arg Asp Val Arg Gln Gln Tyr Glu Ser Val Ala Ala Lys Asn Leu Gln
    210                 215                 220

Glu Ala Glu Glu Trp Tyr Lys Ser Lys Phe Ala Asp Leu Ser Glu Ala
225                 230                 235                 240

Ala Asn Arg Asn Asn Asp Ala Leu Arg Gln Ala Lys Gln Glu Ser Thr
                245                 250                 255

Glu Tyr Arg Arg Gln Val Gln Ser Leu Thr Cys Glu Val Asp Ala Leu
            260                 265                 270
```

Lys Gly Thr Asn Glu Ser Leu Glu Arg Gln Met Arg Glu Met Glu Glu
275 280 285

Asn Phe Ala Val Glu Ala Ala Asn Tyr Gln Asp Thr Ile Gly Arg Leu
290 295 300

Gln Asp Glu Ile Gln Asn Met Lys Glu Glu Met Ala Arg His Leu Arg
305 310 315 320

Glu Tyr Gln Asp Leu Leu Asn Val Lys Met Ala Leu Asp Ile Glu Ile
325 330 335

Ala Thr Tyr Arg Lys Leu Leu Glu Gly Glu Glu Ser Arg Ile Ser Leu
340 345 350

Pro Leu Pro Asn Phe Ser Ser Leu Asn Leu Arg Glu Thr Asn Leu Asp
355 360 365

Ser Leu Pro Leu Val Asp Thr His Ser Lys Arg Thr Phe Leu Ile Lys
370 375 380

Thr Val Glu Thr Arg Asp Gly Gln Val Ile Asn Glu Thr Ser Gln His
385 390 395 400

His Asp Asp Leu Glu
405

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<211> 22

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<213> Shigella Flexneri

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<400> 303

Pro Xaa Tyr Gly Asp Xaa Xaa Xaa Gly Pro Xaa Trp Lys Asp His Leu
1 5 10 15

Met Xaa Arg Cys Lys Phe
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<210> 304

<211> 106

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<400> 304

Ser Phe Xaa Asp Xaa Glu Lys Xaa Asn Ile Cys Leu Gly Ala Xaa Xaa
1 5 10 15

Ile Phe Xaa Val Ala Xaa Arg His Xaa Leu Leu Val Leu Xaa Xaa Leu
20 25 30

Xaa Xaa Xaa Gly Leu Gln His Gly Gly Xaa Xaa Pro Xaa Leu Pro Xaa
35 40 45

Arg Pro Ala Xaa Gly Leu Leu Xaa Val Ser Cys Pro Arg Trp Xaa Gly
50 55 60

Ala Xaa Ala Gly Pro Leu Xaa Tyr Ala Ser Xaa Ile Pro Thr Leu Val
65 70 75 80

Val Cys Thr Arg Ser Gln His Xaa Met His Val Cys Xaa Leu Leu Tyr
85 90 95

Arg Arg Tyr Xaa Arg Xaa Ala Ser Leu Xaa
100 105

<210> 305

<211> 545

<212> PRT

<213> Shigella Flexneri

<400> 305

Ala Ala Ala Thr Asn His Thr Thr Asp Asn Gly Val Gly Pro Glu Glu
1 5 10 15

Glu Ser Val Asp Pro Asn Gln Tyr Tyr Lys Ile Arg Ser Gln Ala Ile
20 25 30

His Gln Leu Lys Val Asn Gly Glu Asp Pro Tyr Pro His Lys Phe His
35 40 45

Val Asp Ile Ser Leu Thr Asp Phe Ile Gln Lys Tyr Ser His Leu Gln
50 55 60

Pro Gly Asp His Leu Thr Asp Ile Thr Leu Lys Val Ala Gly Arg Ile
65 70 75 80

```
His Ala Lys Arg Ala Ser Gly Gly Lys Leu Ile Phe Tyr Asp Leu Arg
                85                  90                  95

Gly Glu Gly Val Lys Leu Gln Val Met Ala Asn Ser Arg Asn Tyr Lys
            100                 105                 110

Ser Glu Glu Glu Phe Ile His Ile Asn Asn Lys Leu Arg Arg Gly Asp
        115                 120                 125

Ile Ile Gly Val Gln Gly Asn Pro Gly Lys Thr Lys Lys Gly Glu Leu
    130                 135                 140

Ser Ile Ile Pro Tyr Glu Ile Thr Leu Leu Ser Pro Cys Leu His Met
145                 150                 155                 160

Leu Pro His Leu His Phe Gly Leu Lys Asp Lys Glu Thr Arg Tyr Arg
                165                 170                 175

Gln Arg Tyr Leu Asp Leu Ile Leu Asn Asp Phe Val Arg Gln Lys Phe
            180                 185                 190

Ile Ile Arg Ser Lys Ile Ile Thr Tyr Ile Arg Ser Phe Leu Asp Glu
        195                 200                 205

Leu Gly Phe Leu Glu Ile Glu Thr Pro Met Met Asn Ile Ile Pro Gly
    210                 215                 220

Gly Ala Val Ala Lys Pro Phe Ile Thr Tyr His Asn Glu Leu Asp Met
225                 230                 235                 240

Asn Leu Tyr Met Arg Ile Ala Pro Glu Leu Tyr His Lys Met Leu Val
                245                 250                 255

Val Gly Gly Ile Asp Arg Val Tyr Glu Ile Gly Arg Gln Phe Arg Asn
            260                 265                 270

Glu Gly Ile Asp Leu Thr His Asn Pro Glu Phe Thr Thr Cys Glu Phe
        275                 280                 285

Tyr Met Ala Tyr Ala Asp Tyr His Asp Leu Met Glu Ile Thr Glu Lys
    290                 295                 300

Met Val Ser Gly Met Val Lys His Ile Thr Gly Ser Tyr Lys Val Thr
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305 310 315 320

Tyr His Pro Asp Gly Pro Glu Gly Gln Ala Tyr Asp Val Asp Phe Thr
325 330 335

Pro Pro Phe Arg Arg Ile Asn Met Val Glu Glu Leu Glu Lys Ala Leu
340 345 350

Gly Met Lys Leu Pro Glu Thr Asn Leu Phe Glu Thr Glu Glu Thr Arg
355 360 365

Lys Ile Leu Asp Asp Ile Cys Val Ala Lys Ala Val Glu Cys Pro Pro
370 375 380

Pro Arg Thr Thr Ala Arg Leu Leu Asp Lys Leu Val Gly Glu Phe Leu
385 390 395 400

Glu Val Thr Cys Ile Asn Pro Thr Phe Ile Cys Asp His Pro Gln Ile
405 410 415

Met Ser Pro Leu Ala Lys Trp His Arg Ser Lys Glu Gly Leu Thr Glu
420 425 430

Arg Phe Glu Leu Phe Val Met Lys Lys Glu Ile Cys Asn Ala Tyr Thr
435 440 445

Glu Leu Asn Asp Pro Met Arg Gln Arg Gln Leu Phe Glu Glu Gln Ala
450 455 460

Lys Ala Lys Ala Ala Gly Asp Asp Glu Ala Met Phe Ile Asp Glu Asn
465 470 475 480

Phe Cys Thr Ala Leu Glu Tyr Gly Leu Pro Pro Thr Ala Gly Trp Gly
485 490 495

Met Gly Ile Asp Arg Val Ala Met Phe Leu Thr Asp Ser Asn Asn Ile
500 505 510

Lys Glu Val Leu Leu Phe Pro Ala Met Lys Pro Glu Asp Lys Lys Glu
515 520 525

Asn Val Ala Thr Thr Asp Thr Leu Glu Ser Thr Thr Val Gly Thr Ser
530 535 540

Val
545

<210> 306

<211> 535

<212> PRT

<213> Shigella Flexneri

<400> 306

Leu Lys Pro Glu Phe Met Arg Arg Pro Asp Lys Ser Phe Asp Pro Phe
1 5 10 15

Thr Glu Val Ile Val Asp Gly Ile Val Ala Asn Ala Leu Arg Val Lys
20 25 30

Val Ile Ser Gly Gln Phe Leu Ser Asp Arg Lys Val Gly Ile Tyr Val
35 40 45

Glu Val Asp Met Phe Gly Leu Pro Val Asp Thr Arg Arg Lys Tyr Arg
50 55 60

Thr Arg Thr Ser Gln Gly Asn Ser Phe Asn Pro Val Trp Asp Glu Glu
65 70 75 80

Pro Phe Asp Phe Pro Lys Val Val Leu Pro Thr Leu Ala Ser Leu Arg
85 90 95

Ile Ala Ala Phe Glu Glu Gly Gly Lys Phe Val Gly His Arg Ile Leu
100 105 110

Pro Val Ser Ala Ile Arg Ser Gly Tyr His Tyr Val Cys Leu Arg Asn
115 120 125

Glu Ala Asn Gln Pro Leu Cys Leu Pro Ala Leu Leu Ile Tyr Thr Glu
130 135 140

Ala Ser Asp Tyr Ile Pro Asp Asp His Gln Asp Tyr Ala Glu Ala Leu
145 150 155 160

```
Ile Asn Pro Ile Lys His Val Ser Leu Met Asp Gln Arg Ala Arg Gln
                165                 170                 175

Leu Ala Ala Leu Ile Gly Glu Ser Glu Ala Gln Ala Gly Gln Glu Thr
            180                 185                 190

Cys Gln Asp Thr Gln Ser Gln Gln Leu Gly Ser Gln Pro Ser Ser Asn
        195                 200                 205

Pro Thr Pro Ser Pro Leu Asp Ala Ser Pro Arg Arg Pro Pro Gly Pro
    210                 215                 220

Thr Thr Ser Pro Ala Ser Thr Ser Leu Ser Ser Pro Gly Gln Arg Asp
225                 230                 235                 240

Asp Leu Ile Ala Ser Ile Leu Ser Glu Val Ala Pro Thr Pro Leu Asp
                245                 250                 255

Glu Leu Arg Gly His Lys Ala Leu Val Lys Leu Arg Ser Arg Gln Glu
            260                 265                 270

Arg Asp Leu Arg Glu Leu Arg Lys Lys His Gln Arg Lys Ala Val Thr
        275                 280                 285

Leu Thr Arg Arg Leu Leu Asp Gly Leu Ala Gln Ala Gln Ala Glu Gly
    290                 295                 300

Arg Cys Arg Leu Arg Pro Gly Ala Leu Gly Gly Ala Ala Asp Val Glu
305                 310                 315                 320

Asp Thr Lys Glu Gly Glu Asp Glu Ala Lys Arg Tyr Gln Glu Phe Gln
                325                 330                 335

Asn Arg Gln Val Gln Ser Leu Leu Glu Leu Arg Glu Ala Gln Val Asp
            340                 345                 350

Ala Glu Ala Gln Arg Arg Leu Glu His Leu Arg Gln Ala Leu Gln Arg
        355                 360                 365

Leu Arg Glu Val Val Leu Asp Ala Asn Thr Thr Gln Phe Lys Arg Leu
    370                 375                 380
```

Lys Glu Met Asn Glu Arg Glu Lys Lys Glu Leu Gln Lys Ile Leu Asp
385 390 395 400

Arg Lys Arg His Asn Ser Ile Ser Glu Ala Lys Met Arg Asp Lys His
405 410 415

Lys Lys Glu Ala Glu Leu Thr Glu Ile Asn Arg Arg His Ile Thr Glu
420 425 430

Ser Val Asn Ser Ile Arg Arg Leu Glu Glu Ala Gln Lys Gln Arg His
435 440 445

Asp Arg Leu Val Ala Gly Gln Gln Gln Val Leu Gln Gln Leu Ala Glu
450 455 460

Glu Glu Pro Lys Leu Leu Ala Gln Leu Ala Gln Glu Cys Gln Glu Gln
465 470 475 480

Arg Ala Arg Leu Pro Gln Glu Ile Arg Arg Ser Leu Leu Gly Glu Met
485 490 495

Pro Glu Gly Leu Gly Asp Gly Pro Leu Val Ala Cys Ala Ser Asn Gly
500 505 510

His Ala Pro Gly Ser Ser Gly His Leu Ser Gly Ala Asp Ser Glu Ser
515 520 525

Gln Glu Glu Asn Thr Gln Leu
530 535

<210> 307

<211> 500

<212> PRT

<213> Shigella Flexneri

<400> 307

Met Gly Ile Gly Leu Ser Ala Gln Gly Val Asn Met Asn Arg Leu Pro
1 5 10 15

Gly Trp Asp Lys His Ser Tyr Gly Tyr His Gly Asp Asp Gly His Ser

20 25 30

Phe Cys Ser Ser Gly Thr Gly Gln Pro Tyr Gly Pro Thr Phe Thr Thr
35 40 45

Gly Asp Val Ile Gly Cys Cys Val Asn Leu Ile Asn Asn Thr Cys Phe
50 55 60

Tyr Thr Lys Asn Gly His Ser Leu Gly Ile Ala Phe Thr Asp Leu Pro
65 70 75 80

Pro Asn Leu Tyr Pro Thr Val Gly Leu Gln Thr Pro Gly Glu Val Val
85 90 95

Asp Ala Asn Phe Gly Gln His Pro Phe Val Phe Asp Ile Glu Asp Tyr
100 105 110

Met Arg Glu Trp Arg Thr Lys Ile Gln Ala Gln Ile Asp Arg Phe Pro
115 120 125

Ile Gly Asp Arg Glu Gly Glu Trp Gln Thr Met Ile Gln Lys Met Val
130 135 140

Ser Ser Tyr Leu Val His His Gly Tyr Cys Ala Thr Ala Glu Ala Phe
145 150 155 160

Ala Arg Ser Thr Asp Gln Thr Val Leu Glu Glu Leu Ala Ser Ile Lys
165 170 175

Asn Arg Gln Arg Ile Gln Lys Leu Val Leu Ala Gly Arg Met Gly Glu
180 185 190

Ala Ile Glu Thr Thr Gln Gln Leu Tyr Pro Ser Leu Leu Glu Arg Asn
195 200 205

Pro Asn Leu Leu Phe Thr Leu Lys Val Arg Gln Phe Ile Glu Met Val
210 215 220

Asn Gly Thr Asp Ser Glu Val Arg Cys Leu Gly Gly Arg Ser Pro Lys
225 230 235 240

Ser Gln Asp Ser Tyr Pro Val Ser Pro Arg Pro Phe Ser Ser Pro Ser
245 250 255

Met Ser Pro Ser His Gly Met Asn Ile His Asn Leu Ala Ser Gly Lys
260 265 270

Gly Ser Thr Ala His Phe Ser Gly Phe Glu Ser Cys Ser Asn Gly Val
275 280 285

Ile Ser Asn Lys Ala His Gln Ser Tyr Cys His Ser Asn Lys His Gln
290 295 300

Ser Ser Asn Leu Asn Val Pro Glu Leu Asn Ser Ile Asn Met Ser Arg
305 310 315 320

Ser Gln Gln Val Asn Asn Phe Thr Ser Asn Asp Val Asp Met Glu Thr
325 330 335

Asp His Tyr Ser Asn Gly Val Gly Glu Thr Ser Ser Asn Gly Phe Leu
340 345 350

Asn Gly Ser Ser Lys His Asp His Glu Met Glu Asp Cys Asp Thr Glu
355 360 365

Met Glu Val Asp Ser Ser Gln Leu Arg Arg Gln Leu Cys Gly Gly Ser
370 375 380

Gln Ala Ala Ile Glu Arg Met Ile His Phe Gly Arg Glu Leu Gln Ala
385 390 395 400

Met Ser Glu Gln Leu Arg Arg Asp Cys Gly Lys Asn Thr Ala Asn Lys
405 410 415

Lys Met Leu Lys Asp Ala Phe Ser Leu Leu Ala Tyr Ser Asp Pro Trp
420 425 430

Asn Ser Pro Val Gly Asn Gln Leu Asp Pro Ile Gln Arg Glu Pro Val
435 440 445

Cys Ser Ala Leu Asn Ser Ala Ile Leu Glu Thr His Asn Leu Pro Lys
450 455 460

Gln Pro Pro Leu Ala Leu Ala Met Gly Gln Ala Thr Gln Cys Leu Gly
465 470 475 480

Leu Met Ala Arg Ser Gly Ile Gly Ser Cys Ala Phe Ala Thr Val Glu
485 490 495

Asp Tyr Leu His
500

<210> 308

<211> 403

<212> PRT

<213> Shigella Flexneri

<400> 308

Met Ala His Ala Met Glu Asn Ser Trp Thr Ile Ser Lys Glu Tyr His
1 5 10 15

Ile Asp Glu Glu Val Gly Phe Ala Leu Pro Asn Pro Gln Glu Asn Leu
20 25 30

Pro Asp Phe Tyr Asn Asp Trp Met Phe Ile Ala Lys His Leu Pro Asp
35 40 45

Leu Ile Glu Ser Gly Gln Leu Arg Glu Arg Val Glu Lys Leu Asn Met
50 55 60

Leu Ser Ile Asp His Leu Thr Asp His Lys Ser Gln Arg Leu Ala Arg
65 70 75 80

Leu Val Leu Gly Cys Ile Thr Met Ala Tyr Val Trp Gly Lys Gly His
85 90 95

Gly Asp Val Arg Lys Val Leu Pro Arg Asn Ile Ala Val Pro Tyr Cys
100 105 110

Gln Leu Ser Lys Lys Leu Glu Leu Pro Pro Ile Leu Val Tyr Ala Asp
115 120 125

Cys Val Leu Ala Asn Trp Lys Lys Lys Asp Pro Asn Lys Pro Leu Thr
130 135 140

Tyr Glu Asn Met Asp Val Leu Phe Ser Phe Arg Asp Gly Asp Cys Ser
145 150 155 160

Lys Gly Phe Phe Leu Val Ser Leu Leu Val Glu Ile Ala Ala Ala Ser
165 170 175

Ala Ile Lys Val Ile Pro Thr Val Phe Lys Ala Met Gln Met Gln Glu
180 185 190

Arg Asp Thr Leu Leu Lys Ala Leu Leu Glu Ile Ala Ser Cys Leu Glu
195 200 205

Lys Ala Leu Gln Val Phe His Gln Ile His Asp His Val Asn Pro Lys
210 215 220

Ala Phe Phe Ser Val Leu Arg Ile Tyr Leu Ser Gly Trp Lys Gly Asn
225 230 235 240

Pro Gln Leu Ser Asp Gly Leu Val Tyr Glu Gly Phe Trp Glu Asp Pro
245 250 255

Lys Glu Phe Ala Gly Gly Ser Ala Gly Gln Ser Ser Val Phe Gln Cys
260 265 270

Phe Asp Val Leu Leu Gly Ile Gln Gln Thr Ala Gly Gly Gly His Ala
275 280 285

Ala Gln Phe Leu Gln Asp Met Arg Arg Tyr Met Pro Pro Ala His Arg
290 295 300

Asn Phe Leu Cys Ser Leu Glu Ser Asn Pro Ser Val Arg Glu Phe Val
305 310 315 320

Leu Ser Lys Gly Asp Ala Gly Leu Arg Glu Ala Tyr Asp Ala Cys Val
325 330 335

Lys Ala Leu Val Ser Leu Arg Ser Tyr His Leu Gln Ile Val Thr Lys
340 345 350

Tyr Ile Leu Ile Pro Ala Ser Gln Gln Pro Lys Glu Asn Lys Thr Ser
355 360 365

Glu Asp Pro Ser Lys Leu Glu Ala Lys Gly Thr Gly Gly Thr Asp Leu

370 375 380

Met Asn Phe Leu Lys Thr Val Arg Ser Thr Thr Glu Lys Ser Leu Leu
385 390 395 400

Lys Glu Gly

<210> 309

<211> 698

<212> PRT

<213> Shigella Flexneri

<400> 309

Gly Glu Pro Glu Gly Ser Phe Val Asp Tyr Gln Thr Thr Met Val Arg
1 5 10 15

Thr Ala Lys Ala Ile Ala Val Thr Val Gln Glu Met Val Thr Lys Ser
20 25 30

Asn Thr Ser Pro Glu Glu Leu Gly Pro Leu Ala Asn Gln Leu Thr Ser
35 40 45

Asp Tyr Gly Arg Leu Ala Ser Glu Ala Lys Pro Ala Ala Val Ala Ala
50 55 60

Glu Asn Glu Glu Ile Gly Ser His Ile Lys His Arg Val Gln Glu Leu
65 70 75 80

Gly His Gly Cys Ala Ala Leu Val Thr Lys Ala Gly Ala Leu Gln Cys
85 90 95

Ser Pro Ser Asp Ala Tyr Thr Lys Lys Glu Leu Ile Glu Cys Ala Arg
100 105 110

Arg Val Ser Glu Lys Val Ser His Val Leu Ala Ala Leu Gln Ala Gly
115 120 125

Asn Arg Gly Thr Gln Ala Cys Ile Thr Ala Ala Ser Ala Val Ser Gly
130 135 140

Ile Ile Ala Asp Leu Asp Thr Thr Ile Met Phe Ala Thr Ala Gly Thr
145 150 155 160

Leu Asn Arg Glu Gly Thr Glu Thr Phe Ala Asp His Arg Glu Gly Ile
165 170 175

Leu Lys Thr Ala Lys Val Leu Val Glu Asp Thr Lys Val Leu Val Gln
180 185 190

Asn Ala Ala Gly Ser Gln Glu Lys Leu Ala Gln Ala Ala Gln Ser Ser
195 200 205

Val Ala Thr Ile Thr Arg Leu Ala Asp Val Val Lys Leu Gly Ala Ala
210 215 220

Ser Leu Gly Ala Glu Asp Pro Glu Thr Gln Val Val Leu Ile Asn Ala
225 230 235 240

Val Lys Asp Val Ala Lys Ala Leu Gly Asp Leu Ile Ser Ala Thr Lys
245 250 255

Ala Ala Ala Gly Lys Val Gly Asp Asp Pro Ala Val Trp Gln Leu Lys
260 265 270

Asn Ser Ala Lys Val Met Val Thr Asn Val Thr Ser Leu Leu Lys Thr
275 280 285

Val Lys Ala Val Glu Asp Glu Ala Thr Lys Gly Thr Arg Ala Leu Glu
290 295 300

Ala Thr Thr Glu His Ile Arg Gln Glu Leu Ala Val Phe Cys Ser Pro
305 310 315 320

Glu Pro Pro Ala Lys Thr Ser Thr Pro Glu Asp Phe Ile Arg Met Thr
325 330 335

Lys Gly Ile Thr Met Ala Thr Ala Lys Ala Val Ala Ala Gly Asn Ser
340 345 350

Cys Arg Gln Glu Asp Val Ile Ala Thr Ala Asn Leu Ser Arg Arg Ala
355 360 365

```
Ile Ala Asp Met Leu Arg Ala Cys Lys Glu Ala Ala Tyr His Pro Glu
    370                 375                 380

Val Ala Pro Asp Val Arg Leu Arg Ala Leu His Tyr Gly Arg Glu Cys
385                 390                 395                 400

Ala Asn Gly Tyr Leu Glu Leu Leu Asp His Val Leu Leu Thr Leu Gln
                405                 410                 415

Lys Pro Ser Pro Glu Leu Lys Gln Gln Leu Thr Gly His Ser Lys Arg
            420                 425                 430

Val Ala Gly Ser Val Thr Glu Leu Ile Gln Ala Ala Glu Ala Met Lys
        435                 440                 445

Gly Thr Glu Trp Val Asp Pro Glu Asp Pro Thr Val Ile Ala Glu Asn
    450                 455                 460

Glu Leu Leu Gly Ala Ala Ala Ala Ile Glu Ala Ala Ala Lys Lys Leu
465                 470                 475                 480

Glu Gln Leu Lys Pro Arg Ala Lys Pro Lys Glu Ala Asp Glu Ser Leu
                485                 490                 495

Asn Phe Glu Glu Gln Ile Leu Glu Ala Ala Lys Ser Ile Ala Ala Ala
            500                 505                 510

Thr Ser Ala Leu Val Lys Ala Ala Ser Ala Ala Gln Arg Glu Leu Val
        515                 520                 525

Ala Gln Gly Lys Val Gly Ala Ile Pro Ala Asn Ala Leu Asp Asp Gly
    530                 535                 540

Gln Trp Ser Gln Gly Leu Ile Ser Ala Ala Arg Met Val Ala Ala Ala
545                 550                 555                 560

Thr Asn Asn Leu Cys Glu Ala Ala Asn Ala Ala Val Gln Gly His Ala
                565                 570                 575

Ser Gln Glu Lys Leu Ile Ser Ser Ala Lys Gln Val Ala Ala Ser Thr
            580                 585                 590
```

Ala Gln Leu Leu Val Ala Cys Lys Val Lys Ala Asp Gln Asp Ser Glu
595 600 605

Ala Met Lys Arg Leu Gln Ala Ala Gly Asn Ala Val Lys Arg Ala Ser
610 615 620

Asp Asn Leu Val Lys Ala Ala Gln Lys Ala Ala Ala Phe Glu Glu Gln
625 630 635 640

Glu Asn Glu Thr Val Val Val Lys Glu Lys Met Val Gly Gly Ile Ala
645 650 655

Gln Ile Ile Ala Ala Gln Glu Glu Met Leu Arg Lys Glu Arg Glu Leu
660 665 670

Glu Glu Ala Arg Lys Lys Leu Ala Gln Ile Arg Gln Gln Gln Tyr Lys
675 680 685

Phe Leu Pro Ser Glu Leu Arg Asp Glu His
690 695

<210> 310

<211> 53

<212> PRT

<213> Shigella Flexneri

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<223> MISC_FEATURE

<400> 310

Xaa Gln Glu Xaa Glu Leu Gln Xaa Ala Gly Asp Ala Xaa Leu Pro Xaa
1 5 10 15

Arg Xaa Arg Xaa Thr Asp Ala Xaa Xaa Trp Val Leu Gly Xaa Gln Thr
20 25 30

Thr Xaa Xaa Xaa Thr Xaa Val Xaa Val Arg Xaa Xaa Xaa Gly Cys Thr
35 40 45

Xaa Xaa Val Ile Ala
50

<210> 311

<211> 314

<212> PRT

<213> Shigella Flexneri

<400> 311

Tyr Ser Pro Thr Ser Pro Ser Tyr Ser Pro Thr Ser Pro Ser Tyr Ser
1 5 10 15

Pro Thr Ser Pro Ser Tyr Ser Pro Thr Ser Pro Ser Tyr Ser Pro Thr
20 25 30

Ser Pro Ser Tyr Ser Pro Thr Ser Pro Ser Tyr Ser Pro Thr Ser Pro
35 40 45

Ser Tyr Ser Pro Thr Ser Pro Ser Tyr Ser Pro Thr Ser Pro Ser Tyr
50 55 60

Ser Pro Thr Ser Pro Ser Tyr Ser Pro Thr Ser Pro Ser Tyr Ser Pro
65 70 75 80

Thr Ser Pro Ser Tyr Ser Pro Thr Ser Pro Asn Tyr Ser Pro Thr Ser
85 90 95

Pro Asn Tyr Thr Pro Thr Ser Pro Ser Tyr Ser Pro Thr Ser Pro Ser
100 105 110

Tyr Ser Pro Thr Ser Pro Asn Tyr Thr Pro Thr Ser Pro Asn Tyr Ser
115 120 125

Pro Thr Ser Pro Ser Tyr Ser Pro Thr Ser Pro Ser Tyr Ser Pro Thr
130 135 140

Ser Pro Ser Tyr Ser Pro Ser Ser Pro Arg Tyr Thr Pro Gln Ser Pro
145 150 155 160

Thr Tyr Thr Pro Ser Ser Pro Ser Tyr Ser Pro Ser Ser Pro Ser Tyr
165 170 175

Ser Pro Thr Ser Pro Lys Tyr Thr Pro Thr Ser Pro Ser Tyr Ser Pro
180 185 190

Ser Ser Pro Glu Tyr Thr Pro Thr Ser Pro Lys Tyr Ser Pro Thr Ser
195 200 205

Pro Lys Tyr Ser Pro Thr Ser Pro Lys Tyr Ser Pro Thr Ser Pro Thr
210 215 220

Tyr Ser Pro Thr Thr Pro Lys Tyr Ser Pro Thr Ser Pro Thr Tyr Ser
225 230 235 240

Pro Thr Ser Pro Val Tyr Thr Pro Thr Ser Pro Lys Tyr Ser Pro Thr
245 250 255

Ser Pro Thr Tyr Ser Pro Thr Ser Pro Lys Tyr Ser Pro Thr Ser Pro
260 265 270

Thr Tyr Ser Pro Thr Ser Pro Lys Gly Ser Thr Tyr Ser Pro Thr Ser
275 280 285

Pro Gly Tyr Ser Pro Thr Ser Pro Thr Tyr Ser Leu Thr Ser Pro Ala
290 295 300

Ile Ser Pro Asp Asp Ser Asp Glu Glu Asn

305 310

<210> 312

<211> 125

<212> PRT

<213> Shigella Flexneri

<400> 312

Met His Lys Glu Glu His Glu Val Ala Val Leu Gly Ala Pro Pro Ser
1 5 10 15

Thr Ile Leu Pro Arg Ser Thr Val Ile Asn Ile His Ser Glu Thr Ser
20 25 30

Val Pro Asp His Val Val Trp Ser Leu Phe Asn Thr Leu Phe Leu Asn
35 40 45

Trp Cys Cys Leu Gly Phe Ile Ala Phe Ala Tyr Ser Val Lys Ser Arg
50 55 60

Asp Arg Lys Met Val Gly Asp Val Thr Gly Ala Gln Ala Tyr Ala Ser
65 70 75 80

Thr Ala Lys Cys Leu Asn Ile Trp Ala Leu Ile Leu Gly Ile Leu Met
85 90 95

Thr Ile Gly Phe Ile Leu Ser Leu Val Phe Gly Ser Val Thr Val Tyr
100 105 110

His Ile Met Leu Gln Ile Ile Gln Glu Lys Arg Gly Tyr
115 120 125

<210> 313

<211> 283

<212> PRT

<213> Shigella Flexneri

<400> 313

Met Glu Lys Thr Cys Ile Asp Ala Leu Pro Leu Thr Met Asn Ser Ser
1 5 10 15

Glu Lys Gln Glu Thr Val Cys Ile Phe Gly Thr Gly Asp Phe Gly Arg
20 25 30

Ser Leu Gly Leu Lys Met Leu Gln Cys Gly Tyr Ser Val Val Phe Gly
35 40 45

Ser Arg Asn Pro Gln Lys Thr Thr Leu Leu Pro Ser Gly Ala Glu Val
50 55 60

Leu Ser Tyr Ser Glu Ala Ala Lys Lys Ser Asp Ile Ile Ile Ile Ala
65 70 75 80

Ile His Arg Glu His Tyr Asp Phe Leu Thr Glu Leu Thr Glu Val Leu
85 90 95

Asn Gly Lys Ile Leu Val Asp Ile Ser Asn Asn Leu Lys Ile Asn Gln
100 105 110

Tyr Pro Glu Ser Asn Ala Glu Tyr Leu Ala His Leu Val Pro Gly Ala
115 120 125

His Val Val Lys Ala Phe Asn Thr Ile Ser Ala Trp Ala Leu Gln Ser
130 135 140

Gly Ala Leu Asp Ala Ser Arg Gln Val Phe Val Cys Gly Asn Asp Ser
145 150 155 160

Lys Ala Lys Gln Arg Val Met Asp Ile Val Arg Asn Leu Gly Leu Thr
165 170 175

Pro Met Asp Gln Gly Ser Leu Met Ala Ala Lys Glu Ile Glu Lys Tyr
180 185 190

Pro Leu Gln Leu Phe Pro Met Trp Arg Phe Pro Phe Tyr Leu Ser Ala
195 200 205

Val Leu Cys Val Phe Leu Phe Phe Tyr Cys Val Ile Arg Asp Val Ile
210 215 220

Tyr Pro Tyr Val Tyr Glu Lys Lys Asp Asn Thr Phe Arg Met Ala Ile
225 230 235 240

Ser Ile Pro Asn Arg Ile Phe Pro Ile Thr Ala Pro Tyr Thr Ala Cys
245 250 255

Phe Gly Leu Pro Pro Trp Cys Tyr Cys Cys His Ser Thr Thr Val Pro
260 265 270

Arg His Lys Ile Pro Ser Ile Pro Arg Leu Ala
275 280

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<211> 105

<212> PRT

<213> Shigella Flexneri

<400> 314

Gln Asp Val Gln Ala Ser Gln Ala Glu Ala Asp Gln Gln Gln Thr Arg
1 5 10 15

Leu Lys Glu Leu Glu Ser Gln Val Ser Gly Leu Glu Lys Glu Ala Ile
20 25 30

Glu Leu Arg Glu Ala Val Glu Gln Gln Lys Val Lys Asn Asn Asp Leu
35 40 45

Arg Glu Lys Asn Trp Lys Ala Met Glu Ala Leu Ala Thr Ala Glu Gln
50 55 60

Ala Cys Lys Glu Lys Leu His Ser Leu Thr Gln Ala Lys Glu Glu Ser
65 70 75 80

Glu Lys Gln Leu Cys Leu Ile Glu Ala Gln Thr Met Glu Ala Leu Leu
85 90 95

Ala Leu Leu Pro Glu Leu Ser Val Leu
100 105

<210> 315

<211> 65

<212> PRT

<213> Shigella Flexneri

<400> 315

Ala Glu Glu Thr Gln Ser Thr Leu Gln Ala Glu Cys Asp Gln Tyr Arg
1 5 10 15

Ser Ile Leu Ala Glu Thr Glu Gly Met Leu Arg Asp Leu Gln Lys Ser
20 25 30

Val Glu Glu Glu Glu Gln Val Trp Arg Ala Lys Val Gly Ala Ala Glu
35 40 45

Glu Glu Leu Gln Lys Ser Arg Val Thr Val Lys His Leu Glu Glu Ile
50 55 60

Val
65

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<211> 18

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<213> Shigella Flexneri

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Xaa Glu Xaa Xaa Met Pro Lys Gly Gln Gly Gly Ile Gly Xaa Leu Xaa
1 5 10 15

Trp Leu

<210> 317

<211> 187

<212> PRT

<213> Shigella Flexneri

<400> 317

Met Thr Ala Asp Leu Pro Asn Glu Leu Ile Glu Leu Leu Glu Lys Ile
1 5 10 15

Val Leu Asp Asn Ser Val Phe Ser Glu His Arg Asn Leu Gln Asn Leu
20 25 30

Leu Ile Leu Thr Ala Ile Lys Ala Asp Arg Thr Arg Val Met Glu Tyr
35 40 45

Ile Asn Arg Leu Asp Asn Tyr Asp Ala Pro Asp Ile Ala Asn Ile Ala
50 55 60

Ile Ser Asn Glu Leu Phe Glu Glu Ala Phe Ala Ile Phe Arg Lys Phe
65 70 75 80

Asp Val Asn Thr Ser Ala Val Gln Val Leu Ile Glu His Ile Gly Asn
85 90 95

Leu Asp Arg Ala Tyr Glu Phe Ala Glu Arg Cys Asn Glu Pro Ala Val
100 105 110

Trp Ser Gln Leu Ala Lys Ala Gln Leu Gln Lys Gly Met Val Lys Glu
115 120 125

Ala Ile Asp Ser Tyr Ile Lys Ala Asp Asp Pro Ser Ser Tyr Met Glu
130 135 140

Val Val Gln Ala Ala Asn Thr Ser Gly Asn Trp Glu Glu Leu Val Lys
145 150 155 160

Tyr Leu Gln Met Ala Arg Lys Lys Ala Arg Glu Ser Tyr Val Glu Thr
165 170 175

Glu Leu Ile Phe Ala Leu Ala Lys Thr Asn Arg
180 185

<210> 318

<211> 548

<212> PRT

<213> Shigella Flexneri

<400> 318

Ala Val Gln Glu Ile Ser His Leu Ile Glu Pro Leu Ala Asn Ala Ala
1 5 10 15

Arg Ala Glu Ala Ser Gln Leu Gly His Lys Val Ser Gln Met Ala Gln
20 25 30

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Tyr Phe Glu Pro Leu Thr Leu Ala Ala Val Gly Ala Ala Ser Lys Thr
        35                  40                  45

Leu Ser His Pro Gln Gln Met Ala Leu Leu Asp Gln Thr Lys Thr Leu
    50                  55                  60

Ala Glu Ser Ala Leu Gln Leu Leu Tyr Thr Ala Lys Glu Ala Gly Gly
65                  70                  75                  80

Asn Pro Lys Gln Ala Ala His Thr Gln Glu Ala Leu Glu Glu Ala Val
                85                  90                  95

Gln Met Met Thr Glu Ala Val Glu Asp Leu Thr Thr Thr Leu Asn Glu
            100                 105                 110

Ala Ala Ser Ala Ala Gly Val Val Gly Gly Met Val Asp Ser Ile Thr
        115                 120                 125

Gln Ala Ile Asn Gln Leu Asp Glu Gly Pro Met Gly Glu Pro Glu Gly
    130                 135                 140

Ser Phe Val Asp Tyr Gln Thr Thr Met Val Arg Thr Ala Lys Ala Ile
145                 150                 155                 160

Ala Val Thr Val Gln Glu Met Val Thr Lys Ser Asn Thr Ser Pro Glu
                165                 170                 175

Glu Leu Gly Pro Leu Ala Asn Gln Leu Thr Ser Asp Tyr Gly Arg Leu
            180                 185                 190

Ala Ser Glu Ala Lys Pro Ala Ala Val Ala Ala Glu Asn Glu Glu Ile
        195                 200                 205

Gly Ser His Ile Lys His Arg Val Gln Glu Leu Gly His Gly Cys Ala
    210                 215                 220

Ala Leu Val Thr Lys Ala Gly Ala Leu Gln Cys Ser Pro Ser Asp Ala
225                 230                 235                 240

Tyr Thr Lys Lys Glu Leu Ile Glu Cys Ala Arg Arg Val Ser Glu Lys
                245                 250                 255
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Val Ser His Val Leu Ala Ala Leu Gln Ala Gly Asn Arg Gly Thr Gln
260 265 270

Ala Cys Ile Thr Ala Ala Ser Ala Val Ser Gly Ile Ile Ala Asp Leu
275 280 285

Asp Thr Thr Ile Met Phe Ala Thr Ala Gly Thr Leu Asn Arg Glu Gly
290 295 300

Thr Glu Thr Phe Ala Asp His Arg Glu Gly Ile Leu Lys Thr Ala Lys
305 310 315 320

Val Leu Val Glu Asp Thr Lys Val Leu Val Gln Asn Ala Ala Gly Ser
325 330 335

Gln Glu Lys Leu Ala Gln Ala Ala Gln Ser Ser Val Ala Thr Ile Thr
340 345 350

Arg Leu Ala Asp Val Val Lys Leu Gly Ala Ala Ser Leu Gly Ala Glu
355 360 365

Asp Pro Glu Thr Gln Val Val Leu Ile Asn Ala Val Lys Asp Val Ala
370 375 380

Lys Ala Leu Gly Asp Leu Ile Ser Ala Thr Lys Ala Ala Ala Gly Lys